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J. R.

Measuring Dispersed Use and Visitor Preferences on the Bureau of Land Management'S National Resource Lands:

King Range Study

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King Range Study

Final Report

for project entitled

Measuring Dispersed Use and Visitor Preferences on the Bureau of Land Management's National Resource Lands

submitted as required by

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between

Bureau of Land Management
and
Rocky Mountain Forest and Range Experiment Station
U.S. Forest Service

and

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between

Colorado State University
and
Rocky Mountain Forest and Range Experiment Station

by

J. Ross Arnold, Research Associate
Department of Recreation Resources
Colorado State University

B. L. Driver, Recreation Research, Project Leader
Rocky Mountain Forest and Range Experiment Station

Perry J. Brown, Department Head
Department of Resource Recreation Management
Oregon State University

and

Lynn Udick, Research Assistant
Department of Recreation Resources
Colorado State University

Fort Collins, Colorado
April 24, 1981

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I. INTRODUCTION

Problem

Growing demands for all uses of the public lands and requirements of the Federal Land Policy and Management Act of 1976 have focused attention within the Bureau of Land Management on the need for better ways of inventorying and managing the nation's public lands. Special attention has been focused on obtaining better measures of the volumes and trends in recreation participation, recreation users' preferences, and assessment of the adverse impacts of recreation use on the resource base.

This study of users of the King Range National Conservation Area in California is one part of a long-term and comprehensive joint research effort by the Rocky Mountain Forest and Range Experiment Station (RMS), Colorado State University (CSU), and the Bureau of Land Management (BLM). The research focuses on identifying and quantifying user preferences for specific recreation opportunities in wilderness, backcountry, and other dispersed recreation environments.[1]

Study Objectives

The specific objectives of the study were:

1. To replicate a procedure (developed by Driver and Brown in Colorado) for identifying and quantifying the recreation-related

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[1]Sampling procedures, analytical techniques, and the format for discussion of results presented in this report are nearly identical to those presented in reports documenting FY78 research (Arkansas River/Little Sahara studies). Since one goal of the overall research was to identify user preferences in areas having different recreation resource characteristics, consistent result reporting facilitates comparisons from year to year between areas.

preferences of recreation users in the King Range National Conservation Area.

2. To provide further empirical support for the Recreation Opportunity Spectrum (ROS) system on public land by pilot testing questions for exploring linkages between recreation activities, settings, and experiences.

In addition, several sub-objectives developed as the research progressed based on information needs of the King Range managers. These sub-objectives included: (1) to identify selected demographic characteristics of users of the King Range; (2) to identify management preferences of King Range users; and (3) to measure and quantify recreation participation in the King Range using roadside interview data and inductive loop counter information.

Study Area

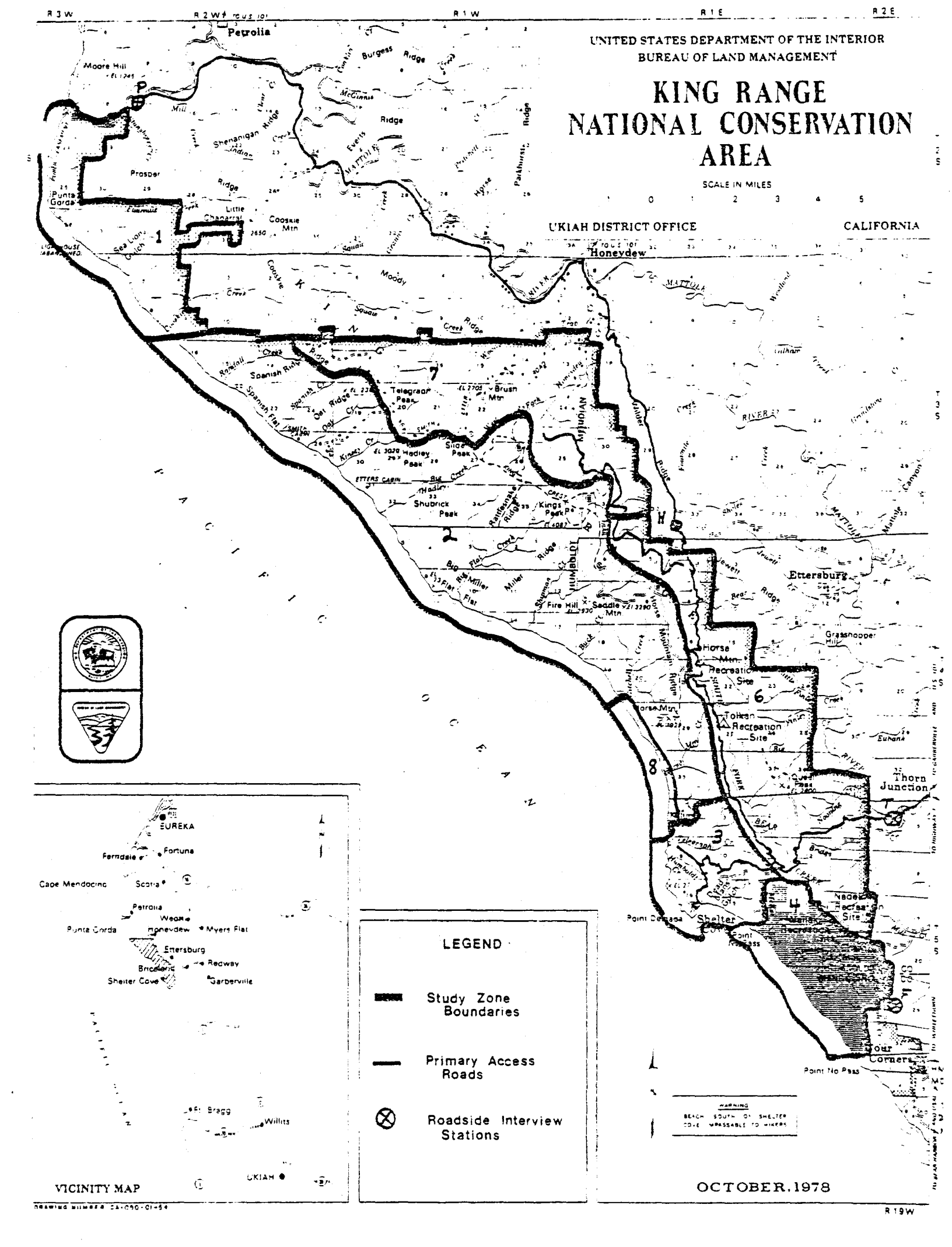
The King Range is located along the coast of northwestern California, 70 miles south of Eureka. The area encompasses approximately 54,000 acres, of which 34,000 acres are administered by the BLM from the Ukiah District Office. The principal geologic feature of the area is the King Mountain Range which rises 4,000 feet above sea level only three miles from the coast. This range is characterized by folded and faulted sedimentary rocks. The majority of the area is covered by thick brush intermixed with grasses and Douglas fir trees.

Use statistics compiled by the BLM indicate that 56,000 visitor days of use occurred in 1974 within the King Range boundary. Recreation activities include camping, sightseeing, fishing, biking, swimming, recreation vehicle use, and surfing.

Figure 1 is a map of the King Range study area. With input from the BLM, the area was divided into eight zones to facilitate the calculation of use statistics and the determination of the types and distribution of recreational use. The zone configurations and numbers are similar to the divisions used by the BLM for planning purposes. Zone 5 (Four Corners area) was not included in the study area because of expected low levels of recreation use. The four traffic-stop interview stations used in this study are each designated on the map by an "X" enclosed in a circle and labeled with a capital letter.

Study Population

The target population for this study consisted of all King Range recreationists exiting the study area via the sampled roads during the sampling period. The sampling period for the study was from June 13 through September 10 in 1979.


UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
KING RANGE NATIONAL CONSERVATION AREA
SCALE IN MILES
0 1 2 3 4 5
UKIAH DISTRICT OFFICE
CALIFORNIA
R3W
R2W
R1W
R1E
R2E
R19W
Petrolia
Honeydew
Ettersburg
Thorn Junction
Shelter Cove
Point Delgada
Point No Pass
Four Corners
Punta Gorda
Moore Hill
Prosper Ridge
Little Chanarral
Cooskie Mtn
Sea Lions Gulch
Moody Ridge
Spanish Ridge
Telegraph Peak
Brush Mtn
Hadley Peak
Shubrick Peak
Kings Peak
Slide Peak
Fire Hill
Saddle Mtn
Horse Mtn
Grasshopper Hill
Tolkan Recreation Site
Horse Mtn Recreation Site
Nadelos Recreation Site
Mattole River
Eel River
Bear River Ridge
Lighthouse Abandoned
LEGEND
Study Zone Boundaries
Primary Access Roads
Roadside Interview Stations
WARNING
BEACH SOUTH OF SHELTER COVE IMPASSABLE TO HIKERS
VICINITY MAP
EUREKA
Fortuna
Ferndale
Cape Mendocino
Scotia
Petrolia
Weott
Punta Gorda
Honeydew
Myers Flat
Ettersburg
Redway
Briceland
Shelter Cove
Garberville
Willits
UKIAH
OCTOBER, 1978

II. METHODS

There were two data collection modes for this study. A short one-page interview schedule (called the exit interview form) was used to collect recreation use information and names and addresses of users as they left the study area. This form was used to develop a representative list of recreationists to whom questionnaires could be mailed later. The second data collection technique was a mail questionnaire to acquire information on: (1) user preferences for specific recreation activity and experience opportunities; (2) user reactions to possible management actions; (3) user characteristics; and (4) user preferences for the attributes of the biophysical, social, and managerial environment which are used in the criteria for the ROS recreation opportunity classes. Response to all interviewing was voluntary, so no one was obligated to respond to any of the data collection efforts.

Exit Interview

The primary objective of the exit interview procedure was to collect the names and addresses of a representative sample of King Range recreationists to build a sample frame for the mail questionnaire. This field contact was also used to collect information concerning each user's primary recreation activity, including the location(s) and length of participation in the study area.

Interviewing Procedures

The procedures for contacting King Range recreationists used an interview technique proven in various recreation environments over the past three years. That technique required contacting recreationists at interview locations as they were leaving the study area. The locations could be either trailheads, parking lots, or along roadsides. As illustrated in the Figure 1 map of the study area, all of the exit interviewing was done along roadsides in this study.

Vehicles were stopped for interviewing only when the interviewer had completed the previous interview and could safely extract a vehicle from the normal traffic flow. Once a vehicle was stopped, the interviewer proceeded with the interview according to a predetermined set of decision rules specifying the questioning procedure.[2] The interviewer approached and questioned either the driver or a passenger, based on a systematic routine for identifying the interviewee, and conducted the interview while the respondent remained in the vehicle. The reason for shifting the interview from driver to a passenger was to obtain a more representative list of area users. The drivers exiting recreation areas tend to be males and heads of households. Because our interests are in the opinions and preferences of other users as well, a practical compromise for obtaining a representative sample was to systematically shift between the driver and a passenger, etc. The interviewee was asked to cooperate in the study and to supply a name and address for follow-up questionnaires. Other passengers in the vehicle were asked for their names and addresses if they resided in a different household than the primary respondent. Any people refusing to participate

[2]For more details, refer to the study plan dated July, 1979.

were thanked for their time and allowed to proceed. The average interview time was approximately two minutes.[3]

Sampling Design

The sample design used was a stratified random sample clustered by days. The stratification structure partitioned the target population into homogeneous groups based on interview stations. A second stratification was used to isolate the weekend, weekday, and holiday users. The size of sample selected from each stratum was proportional to the total population (in this case, vehicles or parties passing by the interview station) of that stratum. Within the strata were clusters comprised of days. Each cluster consisted of a day, with the elements of that cluster defined as the population of recreationists exiting the study area on that day. A sample of clusters was taken from the whole sampling period by selecting specific sampling dates. Once the sample of clusters was selected, the actual interview time period within each cluster represented a subsample of the elements of that cluster.

The sampling scheme[4] and the use statistics generated from the survey were limited to the extent that the sample sizes selected for each sampling period could not be estimated from population variance estimates for the variables included in the study. Sample sizes with specific variance estimates can be calculated for surveys in areas where previous studies have defined, measured, and produced population variance estimates of the same variables to be quantified in a new study. Since data for specific

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[3]Special acknowledgement is due to Jeff Manthos whose fine job of interviewing in the King Range contributed greatly to the success of this research.

[4]Refer to the study plan dated July, 1979, for more details about the sampling plan (times and locations).

variables needed to produce variance estimates were not available for the study area selected, sample size estimates determined for this study were primarily a function of vehicular volume estimates provided by the BLM in Ukiah, budgetary constraints, and the judgments of research personnel and RMS statisticians advising the study. Further studies will benefit from variance estimates generated ex post facto from this study.

Questionnaire

When the users were stopped as they were exiting the study area, a short, one-page questionnaire (exit interview form)[5] was used to record their responses. The respondents were first questioned as to whether or not they were primarily on a recreation excursion. Respondents not on a recreation trip were thanked for their time and directed back to the highway. For those recreating in the study area, information was obtained concerning most important recreation activity, location of participation, time spent in the study area zones, and previous visits to the area in the past 12 months, as well as names and addresses, including zip codes. Observations also were made of the type of vehicle, and number of people in the party and vehicle.

A summary of the results of the exit interview analysis is in Appendix E.

Mail Questionnaire Procedures

The mail questionnaire phase of the research was the most important for identifying the recreation-related preferences of visitors to the King Range. The names and addresses obtained from the exit interview, discussed

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[5]Appendix A, Figure A-1.

in the previous section, constituted the sample frame for distribution of the mail questionnaire.[6]

Mail Questionnaire

The mail questionnaire contained questions designed to provide four broad types of information:

1. Questions designed to identify the types of recreation experiences users desire.
2. Questions designed to measure users' opinions about possible management actions in the area.
3. Questions focusing on the demographic characteristics of users.
4. Questions measuring user preferences for the biophysical, social, and managerial attributes used to identify the ROS classes.

Fifty-five items were used to identify and measure user preferences for different recreation experiences. These items were selected from a pool of items used in previous studies by Driver and Brown (1978) in other parts of the country. For analysis and data reporting purposes, statistically and logically related items are grouped into scales (i.e., a small group of items defining the same type of recreation experience, such as enjoyment of nature, development of skills, escaping noise back home, etc.). Similar scales can be combined even further into experience domains. Domains are broader concepts than scales and are composed of one or more scales which together represent a similar general theme, such as general escape, learning,

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[6]The sample of recreationists for this study was obtained from a roadside traffic stop survey conducted in the King Range from June to mid-September, 1979. During this time period California service stations had a limited and variable supply of gasoline. While we are reasonably certain that our survey produced a representative sample of King Range users during the sampling period in 1979, we cannot be certain that 1979 was a representative year to sample King Range recreationists.

achievement, etc. This study reports the users' responses to both the scales and domains described by the selected recreation experience preference items.[7]

The recreation experience preference questions were presented to the respondents using a Likert response format. This format permitted the respondents to indicate the degree to which a particular type of recreation experience was preferred or valued relevant to participation in a particular activity in the King Range. Two different sets of instructions and related response formats were used in this research. This required two separate questionnaires and two subsamples of respondents. One format asked respondents to rate how important each of the 55 recreation experience preference items[8] was to them as a reason for participating in their selected most important activity (i.e., that one activity they enjoyed the most or spent the most time doing in the King Range). They ranked each experience item on a six-point response format ranging from "not important" to "extremely important."[9] The other format asked the degree to which each listed experience would either add to or detract from their satisfaction if they were to participate in their selected most important activity the following summer. Responses to this format were obtained on a nine-point response format from "most strongly adds" to "most strongly detracts."[10] In each case the same set of recreation experience preference items was used. Two

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[7]Refer to Appendix A, Table A-1 for the complete list of items, scales, and domains used in this study. Also, refer to Driver (1977) for a complete list of the recreation experience preferences.

[8]A total of 57 recreation experience preference items was included on the questionnaires. The first two items of each questionnaire were not analyzed because respondents need a couple of items to become accustomed to the response format. Only results from 55 items are reported.

[9]See Appendix A, Figure A-3 (Blue) - Section VI for example.

[10]See Appendix A, Figure A-2 (Buff) - Section VI for example.

formats were included in this study to provide data comparable with previous research. Discussion in the text will focus only on data from the adds-detracts format, while the appendices will document the importance format analyses.

A second section, using a modified Likert response format, solicited users' opinions on specific management issues of special concern to King Range planners and managers. The 17 questions focusing on possible management considerations were developed with input from the recreation staff of the Ukiah District. Users responded to the questions using a nine-point response format from "very strongly favor" to "very strongly oppose." In addition, users who favor wilderness designation for any of the King Range were asked to identify specific areas which they felt were appropriate for such designation. All respondents were also asked to provide their own definition of wilderness.[11]

Questions about the social and demographic characteristics of the sampled recreationists were included to describe the people visiting the King Range. Information was obtained concerning each respondent's age, sex, education, community population, and zip code of permanent residence.

The Recreation Opportunity Spectrum (ROS) system has been adopted by the BLM for recreation planning.[12] Each recreation opportunity class identified by the ROS system is defined by a set of criteria including specific resource, social and managerial attributes. The questions relating to the ROS system asked the respondents specific questions based on their perceptions about the attributes of the area. Two formats were used to

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[11]See Appendix A, Figure A-2 (Buff) - Section II, III, and V for examples.

[12]More detail on the ROS can be found in Driver and Brown, 1978; Brown, Driver, and McConnell, 1978; Brown, Driver, Bruns, and McConnell, 1979.

obtain information about the characteristics specified in the ROS system.[13] One sample of users was asked to mark a recreation location on a map and then rate their perception of the existing (what is actually there now) resource, social, and managerial characteristics of that specific area. The other sample received an ROS question developed to determine which ROS characteristics the users liked, disliked, or felt were unimportant while recreating in their most important activity. These respondents then rated five different settings to determine which setting was most favorable for recreation participation in their selected activities.

Data Collection

Recipients of the mail questionnaires were randomly selected from the sample frame of names and addresses provided by the exit interviewing. A survey packet containing the questionnaire, cover letter, and postage-paid return envelope was mailed to each selected user. Those people who did not respond to the first mailing were sent a second survey packet three weeks after the first mailing and a subsequent third packet three weeks later if no response was received after the second mailing. Respondents who completed and returned the questionnaires, and that portion of the sample whose survey packets were returned as nondeliverable, were not sent questionnaires during follow-up mailings.

Analysis

Analysis of the mailback questionnaire data using the Colorado State University CYBER 172 computer was done after the questionnaire information was coded, keypunched on computer cards, and verified for accuracy. Statistical

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[13]See Appendix A, Figure A-2 (Buff) and A-3 (Blue) - Section VII for example.

analysis routines were selected from the Statistical Package for the Social Sciences (Nie et al., 1975) and I-Clust[14] (Revelle, 1976) computer packages.

Several statistical programs (frequencies, cross-tabs, ANOVA, breakdown, etc.) from the Statistical Package for the Social Sciences (SPSS) were used to produce descriptive and summary statistics on selected questionnaire data and to compare various user groups. Data on user characteristics and responses categorized into the Likert scaled formats (management questions, recreation experience preferences, and ROS questions) were analyzed using the number of responses and percentages in each response category, rank orders, means, and standard deviations. More advanced analyses were used for comparisons of identifiable user groups. A discussion of these statistics is provided below.

To determine the average response to selected questions, means were computed by dividing the sum of all responses by the number of respondents. When logically related items were grouped into a scale, the respondents' scale scores were calculated and scale score means for the sample were derived from those values. This procedure consisted of summing the individual item scores (separately for each respondent) and dividing by the number of items in the scale answered by the respondent to produce each respondent's scale score. The overall mean scale scores were then calculated from the individual respondent scale scores. Since previous research has consistently defined a close association between items belonging to the same scale, respondents only had to answer one item from a scale to have a

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[14]I-Clust was used to group the fifty-five recreation experience preference items into scales and domains.

scale score determined. Similarly, the overall mean domain[15] scores for domains with multiple scales were determined by developing a domain score (from the scale scores) for each respondent and then averaging these scores to get the overall mean domain score across all respondents.

Standard deviations give an indication of the variability or variance of all the responses around the mean value. Individual item standard deviations were computed using the standard computational formula found in general statistics books. Standard deviations for multiple item scales were computed by averaging standard deviations of the items within that scale. Multiple scale domains have standard deviations averaged from the standard deviations of the scales belonging to each domain.

Rank orders are reported to determine the relative importance (highest to lowest) of a series of scores or numbers listed in the tables of this report. The score having the highest value received a rank of one with subsequent scores ranked sequentially in descending order from the highest to lowest. Two or more scores with equal values were ranked the same, but were each counted individually to reflect proper ranking of subsequent data. For example, a column of rank orders might show number one rankings for each of three equal scores followed by the next score ranked fourth. That score was ranked fourth, instead of second or third, because there were three scores with higher values.

Responses to selected questions on the mailback questionnaire were used to categorize the sampled respondents into subgroups (e.g., hikers, fishermen, campers, etc.). Statistical testing of selected scaled

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[15]While most of the descriptive statistics and comparative analyses are presented through discussion of relationships between recreation experience preference scales, the domain values are included on most tables to (1) define logical groupings of scales for interpretation, and (2) fully document the results of the research.

questions was conducted to determine if significant differences existed between the calculated means of each subgroup or category. A test indicating a statistically significant difference ($p \leq .05$)[16] between two subgroup means suggests that the observed discrepancy would occur by chance alone 5 percent of the time or less. Loosely interpreted, if the statistical criteria are met, there is strong evidence to support the premise that the subgroup means are actually (and not randomly) different.

Two statistical procedures were used to test for mean differences. A comparison involving only two sample means used a Student's t-test. When the analysis consisted of more than two sample means, analysis of variance in conjunction with a Student-Newman-Keuls test was utilized to discern the pairwise differences. The analysis of variance procedure was used first to test for the existence of statistically significant differences ($p \leq .05$). If differences were found, then the Student-Newman-Keuls test was used to isolate specific differences by comparing all possible combinations (pairs) of sample means. The interpretation of the results is identical for either of the statistical procedures used (i.e., Student's t-test or analysis of variance/Student-Newman-Keuls test). Subgroup comparisons described above were principally performed on the most important activity categories and on groups of respondents categorized by travel time to the King Range.

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[16]The probability level (p) listed in parentheses defines the range of acceptable probability levels that was used to reject the hypothesis that the differences between the observed (sample) means were due to chance. Significant differences between the means were reported if the tests showed probability levels less than or equal to 5 percent ($p \leq .05$).

III. CHARACTERISTICS AND PREFERENCES OF KING RANGE RECREATIONISTS

This part of the report focuses on the characteristics and preferences of recreationists in the King Range.[17] The data shown in the ensuing tables were analyzed from the mailback questionnaires. The recreationists are characterized by age, sex, education, and size of place of residence. Specific activity preferences, recreation experience preferences (REP's), and preferences for possible management actions are all outlined from the responses of the King Range recreationists.

Mail Questionnaire Response

The sample of King Range recreationists was randomly divided into two groups for receipt of one of the two questionnaires sent during the fall of 1979. Table 1 presents the response rates for each of these questionnaires, compiled after three mailings to each sample. Sixty-nine percent of the people receiving questionnaires returned them complete and ready for key-punching. Approximately 3 percent of the questionnaires sent out were returned as nondeliverable. When the number of nondeliverable questionnaires was subtracted from the total number mailed, the effective sample size was determined. This figure, along with the number of completed questionnaires, was used to calculate the response rate, which was considered to represent an adequate sample of the King Range recreation population.

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[17]During the exit interviewing several respondents indicated that they were not recreating in the King Range on that trip, but often engaged in recreation in the King Range at other times and were interested in receiving a questionnaire. This "nonrecreation" sample was sent mailback questionnaires to see if they had unique preferences from the main sample of users. Appendix F summarizes selected characteristics and preferences of the "nonrecreationists" who returned completed questionnaires.

Table 1. Results of the King Range NCA questionnaire mailings (Summer, 1979).[a]

Questionnaires[b]	Sample Size	Nondeliverable	Effective Sample Size[c]	Returned Complete	Response Rate Percent[d]
Buff	160	5	155	107	69
Blue	160	6	154	107	69

[a]The questionnaires were sent through the postal system in the fall of 1979.

[b]Copies of the questionnaire can be found in Appendix A, Figure A-2 (Buff) and Figure A-3 (Blue).

[c]Effective sample size reflects the number of people actually receiving the questionnaire.

[d]Percentage calculated by dividing the number of returned questionnaires by the effective sample size.

The sample size for the questionnaire mailing was smaller than anticipated due to the large number (40 percent) of recreationists interviewed who did not provide a name and address for the mailings. Analysis of the exit interview data indicates that, as a group, these individuals spent an average of 8 hours in the area, while the average length of stay for the group that did provide a name and address was 31 hours. In addition, over half of the "no address" group stated that sightseeing/auto driving was their primary trip purpose. This analysis corroborates the interviewers' reports that the majority of the people who did not agree to receive a questionnaire said that they had just driven into the area to see what was there and did not feel that they were familiar enough with the King Range to respond to the questionnaire. Because of this factor, the mail questionnaire sample appears to underrepresent those recreationists, especially sightseers, who were only in the area for a short time. This should be considered in reviewing the data for the total sample, since the results presented here may overrepresent the views of recreationists who are more familiar with the area; however, the sample does provide adequate representation of recreationists engaged in all major recreational activites in the King Range, including sightseeing. While smaller than anticipated, the sample is well representative of visitors who come to the King Range to recreate, and particularly, of those recreationists who are familiar enough, and interested enough, in the area to desire input into management decisions.

Sample Summary Statistics

Characteristics of Visitors to the King Range

Selected demographic characteristics of the King Range sample are presented in Table 2. The average age of the respondents was 41 years with 30 percent between the ages of 26 and 35. Eighty percent of the respondents were male.[18] The average amount of education was equivalent to three years of college with 75 percent of the respondents having at least one year of college education. Nearly half (47 percent) of the people responding to the questionnaire lived in communities smaller than 25,000 total population, while almost one-quarter (23 percent) were from cities of more than 500,000 people.

Respondents were categorized by their zip codes into groups based on the approximate driving distance from their residences to the King Range. Only 10 percent of the recreationists lived within a one-hour drive of the King Range (Table 3). Another 26 percent lived one to four hours away, and an additional 57 percent resided in a California area more than four hours from the King Range. Eight percent of the recreation sample was from outside California. These data show clearly that most of the users drive some distance to reach the area.

Table 4 gives an indication of the familiarity the respondents have with the King Range. Respondents were asked to indicate the total number

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[18]The sample clearly overrepresents male recreationists. Sampling people in vehicles as they exit the study area provides a difficult setting for randomly selecting male and female respondents. Prospective female respondents invariably do not end up in our name and address sample frame because: (1) males quickly volunteer the answers; (2) females seek help from the males; or (3) the male name is usually given for the mail return questionnaire.

Table 2. Age, sex, education, and community size of respondents sampled in the King Range NCA (Summer, 1979).

Age (N=202)	Age	Percent	
	Under 18	1	
	18 - 25	10	
	26 - 35	30	
	36 - 50	32	Mean = 41 years
	51 - 65	21	
	Over 65	6	
Sex (N=202)	Sex	Percent	
	Male	80	
	Female	20	
Education (N=203)	Years of Formal Schooling	Percent	
	Under 13	25	
	13 - 16	46	Mean = 15 years
	Over 16	29	
Community Size (N=204)	Population	Percent	
	500,000 or more	23	
	100,000-500,000	7	
	25,000-100,00	24	
	5,000-25,000	23	
	Below 5,000	9	
	Rural	15	

Table 3. Driving time to the King Range NCA from the residence of respondents sampled in the King Range NCA (Summer, 1979).[a]

Driving time to the King Range NCA	Number of Respondents	Percent[b]
Within one hour	20	10
One to four hours	52	26
Other California	114	57
Out-of-state	16	8

[a]Residence is based on zip code of respondent's permanent address.

[b]Percentage values are calculated based on N=202 respondents with valid zip codes.

Table 4. Total number of visits to the King Range NCA of respondents sampled (Summer, 1979).

Total Number of Visits[a]	Number of Respondents	Percent[b]
1	51	26
2 - 3	38	19
4 - 6	32	16
7 - 15	28	14
16 - 30	12	6
Over 30	37	19

[a]Total number of visits made to the King Range NCA.

[b]Percentage values are calculated based on N=198 respondents answering this question.

of visits they had made to the King Range. Over 25 percent of the respondents had been contacted by the interviewers on their only visit to the area. Thirty-five percent had made two to six previous visits. Approximately one-fourth of the sample could be characterized as very familiar with the King Range, having made over 16 visits to the area.

Recreation Activity Summary

Eighty-five percent of the respondents hiked in the King Range, and wildlife viewing, photography, sightseeing/auto driving, and camping near automobiles were participated in by more than one-half of the respondents. Table 5 shows all the activities respondents participated in during the summer of 1979. Rank orders for activities were calculated by assigning the highest ranks to the activities with the most respondents indicating recreation participation.

The "most important" activity of each respondent was determined by asking which activity each person enjoyed the most or spent the most time doing while visiting the King Range. Responses to this question form the basis for most of the comparison analyses incorporated into this report. It is important in interpreting these results to be familiar with the terminology "most important" activity, and to understand the question asked of respondents to determine that activity.

Thirty-three percent of the users listed hiking/walking as their most important activity (Table 6). Only ocean fishing, camping near auto, sightseeing/auto driving, nature study and camping away from auto were also reported as a most important activity by at least 5 percent of the respondents. In combination, Tables 5 and 6 show clearly that the King Range users engage in a variety of activities during their visits, and that some

Table 5. Number of respondents sampled indicating participation in specific activities in the King Range NCA (Summer, 1979).[a]

Activity	Number of Respondents[b]	Percent[c]	Rank Order[d]
Hiking/Walking	176	85	1
Wildlife Viewing	144	69	2
Photography	127	61	3
Sightseeing/Auto Driving	118	57	4
Camping Near Auto	105	51	5
Picnicking	103	50	6
Nature Study	100	48	7
Ocean Fishing	92	44	8
Collecting	67	32	9
Camping Away From Auto	66	32	10
Swimming	50	24	11
Fresh Water Fishing	42	20	12
4-Wheel Driving	29	14	13
Hunting	21	10	14
Surfing	18	9	15
Motorcycling	11	5	16
Other	19	9	

[a]Since recreationists could participate in more than one activity, the percent column will not total 100 percent.

[b]Number of respondents sampled who indicated recreation participation in the listed activity.

[c]Percentage values are calculated based on N=208 respondents answering this question.

[d]Activities are ranked in descending order based on the number of respondents in each activity. Tied scores are given the same rank.

Table 6. The most important activity of the respondents sampled in the King Range NCA (Summer, 1979).

Most Important Activity[a]	Number of Respondents[b]	Percent[c]
Hiking/Walking	67	33
Ocean Fishing	42	21
Camping Near Auto	12	6
Sightseeing/Auto Driving	11	5
Nature Study	10	5
Camping Away From Auto	9	5
Wildlife Viewing	8	4
Hunting	6	3
Photography	6	3
Surfing	6	3
4-Wheel Driving	5	3
Picnicking	4	2
Motorcycling	4	2
Collecting	2	1
Fresh Water Fishing	2	1
Swimming	1	1
Other	7	4

[a]Activities are listed in descending order based on the number of respondents. Activities which were not listed as most important activity by any of the respondents are not included in this table.

[b]Number of respondents sampled who listed this activity as the one they enjoyed the most or spent the most time doing during their visits to the King Range NCA.

[c]Percentage values are calculated based on N=202 respondents answering this question.

activities, such as wildlife viewing, photography and picnicking, are engaged in frequently during visits to participate in other "most important" activities.

For the purpose of comparison, four activity groups were identified based on the activity which respondents identified on the mailback questionnaire as being most important on their visit to the King Range (e.g., camping near auto, ocean fishing, etc.). Three of these groups are combined from subgroups of respondents whose most important activities were judged to be fairly similar, such as camping away from autos and hiking. Statistical analysis was used to verify the similarities in the responses of the activity subgroups that were combined. The four activity groups that are compared throughout this report are:

1. Roadside Users: includes all respondents whose most important activity was either camping near auto, sightseeing/auto driving, or picnicking.
2. Backcountry Users: includes all respondents whose most important activities were either camping away from auto or hiking/walking.
3. Ocean Fishing: includes those respondents whose most important activity was ocean fishing.
4. Nature Observers: includes all respondents whose most important activity was either nature study, wildlife viewing, or photography.

The activity groupings appear to explain some of the variation in the total number of previous visits indicated by respondents (Table 7). Those respondents listing ocean fishing as their most important activity have the highest number of previous visits. Over 40 percent of that group reported having made over 30 visits to the area. Roadside users represent the opposite extreme. Over half of those respondents were visiting the

Table 7. Percentage of recreationists in each most important activity group by their total number of visits, for respondents sampled in the King Range NCA (Summer, 1979).

Number of Visits[a]	Activity Groups			
	Roadside Users (N=27)[b]	Backcountry Users (N-73)[b]	Ocean Fishermen (N=39)[b]	Nature Observers (N=23)[b]
	Percent	Percent	Percent	Percent
1	52	32	8	30
2 - 3	19	23	5	35
4 - 6	19	21	13	13
7 - 15	0	16	21	4
16 - 30	0	1	13	4
Over 30	11	7	41	13

[a]Total number of visits made to the King Range NCA.

[b]Percentage values are calculated based on the number of respondents (indicated by N) in each most important activity group answering this question.

King Range for the first time. It is likely that people who were sightseers on their first trip would return to the King Range with a specific activity in mind, and enter into one of the other most important activity groups. That is one possible explanation for the high percentage of first time visitors in the roadside users group compared to the other activity groups.

Table 8 presents the results of the analysis isolating differences in users characteristics between members of the four most important activity groups. The Student-Newman-Keuls test for differences revealed that the group of backcountry users had significantly more years of formal schooling than ocean fishermen. In addition, both ocean fishermen and the roadside users were significantly older than either the backcountry users or the nature observers.

A similar analysis for differences between the four activity groups based on driving distance from respondent's residence to the King Range showed no differences.[19] Therefore, there is no relationship between membership in most important activity groups and the distance respondents live from the study area.

Zones (Areas) of Recreation Participation

Most of the King Range recreation participation reported by respondents was focused in three areas. Zones 1, 2, and 3 (see Figure 1) account for over 75 percent of the recorded recreation participation. This information was acquired from a subset of the King Range respondents who were asked to

[19]See Appendix C, Table C-1 for a breakdown of driving distance by most important activity.

Table 8. Significant differences in age and education between groups based on most important activity of respondents sampled in the King Range NCA (Summer, 1979).

	Activity Groups				
	1	2	3	4	
	Roadside Users (N=27)[a]	Backcountry Users (N=75)[a]	Ocean Fishermen (N=40)[a]	Nature Observers (N=24)[a]	Groups That Differ Significantly[b]
	Mean	Mean	Mean	Mean	
Age (Years)	46.2	38.8	50.0	35.7	3,1>2,4
Education (Years of formal schooling)	15.1	16.1	13.7	14.9	2>3

[a]Calculations are based on at least the number of respondents indicated by N.

[b]This column indicates that each activity group (1-4) to the left of the ">" has a mean that is significantly greater than the mean of each group to the right, based on the Student-Newman-Keuls test ($p \leq .05$).

recall where they had engaged the most in their most important activity.[20] The percentage and number of respondents recreating in each zone are listed in Table 9. Zone 3 was the most popular use zone, whereas zones 6 and 8 were mentioned by less than 10 percent of the recreationists. A further division of the zone information is displayed in Table 10 where the most important activities are listed by zone to give an indication of the distribution of activity participation across the study area. Hiking in zones 1, 2, and 3 and ocean fishing in 3 characterize most of the major activity participation by zone.

Recreation Experience Preferences

Two different question formats (adds-detracts and importance) were used in this study to determine the recreation experience preferences (REP's) of sampled recreationists visiting the King Range during the summer of 1979. This section of the report utilizes the adds-detracts question format to present the results of the REP question. The adds-detracts questions asked respondents to rate whether each REP item would add to or detract from the level of satisfaction they would probably realize if they visited the same area the following year and participated in their listed "most important" activity.

Several different levels of data specificity and statistics for data analysis are used to document the Recreation Experience Preferences of

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[20]This subsample of King Range users received the "Buff" questionnaire and responded to the map portion of the ROS question (See Appendix A, Figure A-2, section VII). Respondents were instructed to identify a recreation location on a map only if they could recall the specific area where they engaged in their most important activity. Sixty-two percent of the "Buff" questionnaire respondents answered this question.

Table 9. Number of sampled respondents indicating each zone as the area where they engaged in their most important activity in the King Range NCA (Summer, 1979).

Zone[a]	Number of Respondents	Percentage[b]
1	15	23
2	15	23
3	21	32
4	7	11
6	5	8
8	3	5

[a]Zones which were not indicated as a site of a most important activity for many of the respondents are not included in this table.

[b]Percentages are calculated based on N=66 respondents answering this question.

Table 10. Number of respondents participating in each most important activity within each zone of the King Range NCA (Summer, 1979).

Most Important Activity	Zone[a] 1	2	3	4	6	8	Total
Camping Near Auto	1		1	3			5
Camping Away From Auto		2					2
Picnicking	1						1
Sightseeing/Auto Driving	1		1				2
4-Wheel Driving		1					1
Motorcycling					1		1
Hiking/Walking	8	8	6	1	1		24
Ocean Fishing	1	1	8			1	11
Fresh Water Fishing					1		1
Hunting		1	1				2
Nature Study	1	2	1		1		5
Photography			1			1	2
Wildlife Viewing			1	1	1		3
Swimming	1						1
Surfing	1		1	1			3
Other				1		1	2
TOTAL	15	15	21	7	5	3	66

[a]Zones which were not indicated as a site of a most important activity for any of the respondents are not included in this table.

King Range recreationists. This discussion overviews a subset[21] of this information including: (1) overall REP's of the King Range sample; (2) REP's of recreationists participating in selected most important activities; and (3) differences between REP scores of users participating in different activities.

The 55 REP items included on the mail questionnaires were grouped according to previous research into 42 scales and 18 domains (Table 11). The REP scale scores, like the individual REP item scores, can vary from +4 (most strongly adds to) to -4 (most strongly detracts from) satisfaction. While the scale means for the King Range sample indicate that almost all the scales measured experiences which added to the respondents' satisfaction, the mean values ranged from -0.3 (i.e., neutral) for the Observing Other People scale to 3.5 (most strongly adds to satisfaction) for the Scenery scale.. The REP scales were ordered from highest to lowest to give a better indication of the relative importance of all the scales. Scales with the same means were assigned equivalent ranks and subsequent ranks were adjusted to reflect the number of scales with higher ranks. Ranked number one and two were Scenery and Escape Crowds. Five of the seven REP scales with the highest means were in one of the two escape-related dimensions measuring user preferences for getting away from physical and social pressures of everyday life. Observing Other People, Risk Taking, Risk Avoidance, Leading Others, and Social Recognition were ranked lowest, with means indicating that these experiences neither added to nor detracted from perceived satisfaction.

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[21]Comprehensive documentation of the King Range REP analyses is in Appendix B, Tables B-1 to B-4. Included in these tables are the means, standard deviations, and number of respondents for the REP items, scales, and domains for all sampled recreationists in the King Range and for recreationists categorized by most important activity. Additionally, Appendix B contains the above REP documentation for King Range respondents receiving the questionnaire with the importance format.

Table 11. Recreation experience preference domain and scale (offset to the right) means for all respondents sampled in the King Range NCA using the "adds to - detracts from" response format. (Summer, 1979).

Recreation Experience Preferences Domain Scale	Mean[a] Domain	Scale	Rank of Scale Means[b]
1. Relationship with Nature	3.4		
Scenery		3.5	1
General Nature Experience		3.3	3
2. Escape Physical Pressure	3.0		
Tranquility		3.0	6
Seek Open Space		3.3	3
Privacy		2.2	19
Escape Crowds		3.4	2
Escape Physical Stressors		2.8	9
3. Exercise/Physical Fitness	2.8		
Exercise/Physical Fitness		2.8	9
4. Escape Personal-Social Pressure	2.8		
Tension Release		2.3	15
Slow Down Mentally		2.5	13
Escape Role Overloads		3.3	3
Escape Daily Routine		2.9	7
5. General Learning	2.7		
General Learning		2.7	12
Exploration		2.9	7
Geography of Area		2.3	15
Learn About Nature		2.8	9
6. Family Togetherness	2.4		
*Family Togetherness		2.4	14
7. Physical Rest	2.2		
Physical Rest		2.2	19
8. Being with People	2.1		
Being with Friends		1.9	25
Being with Similar People		2.3	15
9. Security	2.1		
Social Security		2.1	22
10. Achievement	1.8		
Reinforcing Self-Image		2.1	22
Social Recognition		0.3	39
Skill Development		1.9	25
Competence Testing		1.9	25
Seeking Stimulation		2.3	15
11. Reflect on Personal Values	1.8		
Spiritual		2.0	24
Introspection		1.6	31
12. Creativity	1.8		
Creativity		1.8	28
13. Nostalgia	1.8		
Nostalgia		1.8	28
14. Equipment	1.7		
Equipment		1.7	30
15. Leadership/Autonomy	1.5		
Independence		2.2	19
Autonomy		1.6	31
Control Power		1.5	34
Teaching-Sharing Skills		1.6	31
Leading Others		0.4	38
16. Temperature	1.3		
Temperature		1.3	35
17. Risk Taking	0.6		
Risk Taking		0.3	39
Risk Moderation		1.2	36
Risk Avoidance		0.3	39
18. Meeting-Observing New People	0.2		
Meeting New People		0.5	37
Observing Other People		-0.3	42

[a]Means are based on responses to a nine-point response format ranging from +4 (most strongly adds) to -4 (most strongly detracts). Calculations for each domain or scale are based on at least N=91 respondents. See Appendix B for a more detailed presentation of REP statistics.

[b]Ranks are based on mean scores on the REP scales, with tied scores given the same rank.

REP Differences Between Activity Groups

The means on the scales and domains for respondents in each major most important activity group are listed in Table 12. Only the combined activity groups (roadside users, backcountry users, ocean fishermen, and nature observers) had sample sizes large enough for this analysis. The Escape Role Overloads, Scenery, General Nature Experience, Escape Crowds, and Seek Open Space scales continued to be ranked high across all activity groups. The mean for backcountry users on the Escape Crowds scale was 3.8. This is the highest mean in this study and higher than any mean measured in recent research.

Differences between the four most important activity groups are easier to identify in the far right column of Table 12. A Student-Newman-Keuls test in conjuction with analysis of variance ($p \leq .05$) was used to identify pairwise differences between the REP scale means of the activity groups. Activity groups correspond to numbers assigned in the activity group column headings. The scales are grouped under general domain headings for ease of interpretation. Under the column labeled "Groups That Differ Significantly," any activity groups (by assigned number 1, 2, 3, or 4) that are to the left of the ">" (greater than) sign have means that are significantly larger than the mean of any activity groups (1, 2, 3, or 4) to the right of that sign. There is a one-to-one (group-to-group) statistical relationship between the activity groups separated by a (>) sign. Therefore, ocean fishermen and roadside users each have a significantly greater mean for the Meeting New People scale than do the backcountry users. The nature observation group had an intermediate mean on this scale that was not significantly different from the groups on either extreme. An NSD

Table 12. Recreation experience preference domain (D) and scale (S) (offset to the right) means for those respondents sampled in the King Range NCA using the "adds to - detracts from satisfaction" response format, grouped by their most important activity (Summer, 1979).

Recreation Experience Preferences Domain / Scale	Activity Groups 1 Roadside Users (N=10)[a] Mean[b] D	S	Rank of Scale Means[c]	2 Backcountry Users (N=30)[a] Mean[b] D	S	Rank of Scale Means[c]	3 Ocean Fishermen (N=15)[a] Mean[b] D	S	Rank of Scale Means[c]	4 Nature Observers (N=13)[a] Mean[b] D	S	Rank of Scale Means[b]	Groups That Differ Significantly[d]
1. Relationships with Nature	3.6			3.6			2.6			3.6			
Scenery		3.7	1		3.6	2		2.5	9		3.6	1	1,4,2>3
General Nature Experience		3.5	2		3.5	4		2.6	8		3.6	1	4,2,1>3
2. Escape Physical Pressure	2.7			3.3			2.5			2.9			
Tranquility		2.9	8		3.2	6		2.2	14		3.0	6	2>3
Seek Open Space		2.8	10		3.6	2		2.8	5		3.4	3	NSD
Privacy		1.2	32		2.7	13		1.4	30		2.6	11	2,4>3,1
Escape Crowds		2.9	8		3.8	1		3.1	1		3.2	4	NSD
Escape Physical Stressors		2.8	10		3.1	7		2.8	5		2.1	17	NSD
3. Exercise/Physical Fitness	2.6			2.8			2.3			2.8			
Exercise/Physical Fitness		2.6	13		2.8	10		2.3	12		2.8	8	NSD
4. Escape Personal-Social Pressure	2.8			2.8			2.5			2.4			
Tension Release		2.3	19		2.3	17		1.8	21		2.1	17	NSD
Slow Down Mentally		2.4	16		2.6	14		2.4	10		1.7	26	NSD
Escape Role Overload		3.2	4		3.3	5		3.0	3		3.2	4	NSD
Escape Daily Routine		3.3	3		2.8	10		3.0	3		2.4	14	NSD
5. General Learning	2.7			2.8			2.0			2.7			
General Learning		2.6	13		2.8	10		2.0	16		2.7	9	NSD
Exploration		3.0	6		3.0	8		2.1	15		2.7	9	NSD
Geography of Area		1.6	27		2.5	15		1.6	25		2.4	14	NSD
Learn About Nature		2.8	10		2.9	9		1.9	18		2.9	7	NSD
6. Family Togetherness	3.0			2.3			2.8			1.8			
Family Togetherness		3.0	6		2.3	17		2.8	5		1.8	24	1>4
7. Physical Rest	3.1			1.8			2.3			2.5			
Physical Rest		3.1	5		1.8	27		2.3	12		2.5	13	NSD
8. Being with People	2.4			1.9			2.7			1.6			
Being with Friends		2.3	19		1.6	29		2.4	10		1.1	31	NSD
Being with Similar People		2.4	16		2.1	20		3.1	1		2.0	22	NSD
9. Security	2.4			2.0			1.9			2.4			
Social Security		2.4	16		2.0	21		1.9	18		2.4	14	NSD
10. Achievement	1.2			1.8			1.5			1.4			
Reinforcing Self Image		2.1	21		2.0	21		1.5	28		1.6	27	NSD
Social Recognition		-0.1	41		0.4	38		0.1	41		-0.1	39	NSD
Skill Development		1.2	32		1.9	24		1.9	18		1.6	27	NSD
Competence Testing		1.2	32		2.0	21		1.6	25		1.8	24	NSD
Seeking Stimulation		1.6	27		2.5	15		1.7	24		2.1	17	NSD

Table 12. Continued.

Recreation Experience Preferences Domain / Scale	Activity Groups 1 Roadside Users (N=10)[a] Mean[b] D	S	Rank of Scale Means[c]	2 Backcountry Users (N=30)[a] Mean[b] D	S	Rank of Scale Means[c]	3 Ocean Fishermen (N=15)[a] Mean[b] D	S	Rank of Scale Means[c]	4 Nature Observers (N=13)[a] Mean[b] D	S	Rank of Scale Means	Groups That Differ Significantly[d]
11. Reflect on Personal Values	2.0			1.9			0.7			1.8			
Spiritual		2.5	15		1.8	27		0.9	35		1.9	23	NSD
Introspection		1.6	27		1.9	24		0.5	39		1.6	27	2,4,1>3
12. Creativity	0.8			1.9			0.7			2.1			
Creativity		0.8	38		1.9	24		0.7	38		2.1	17	4>1,3
13. Nostalgia	2.1			1.6			2.0			1.1			
Nostalgia		2.1	21		1.6	29		2.0	16		1.1	31	NSD
14. Equipment	1.2			1.5			1.8			2.1			
Equipment		1.2	32		1.5	32		1.8	21		2.1	17	NSD
15. Leadership/Autonomy	1.7			1.4			1.2			1.2			
Independence		1.8	25		2.3	17		1.8	21		2.6	11	NSD
Autonomy		2.0	23		1.4	33		1.5	28		1.1	31	NSD
Control Power		1.7	26		1.4	33		1.4	30		1.0	35	NSD
Teaching-Sharing Skills		1.1	36		1.6	29		1.4	30		1.5	30	NSD
Leading Others		0.7	39		0.5	37		0.0	42		0.1	38	NSD
16. Temperature	2.0			1.2			0.9			0.2			
Temperature		2.0	23		1.2	35		0.9	35		0.2	37	1>4
17. Risk Taking	0.7			0.2			0.9			0.2			
Risk Taking		-0.8	42		0.4	38		0.3	40		-0.2	41	NSD
Risk Moderation		1.5	30		0.6	36		1.6	25		1.1	31	NSD
Risk Avoidance		1.0	37		-0.5	41		0.8	37		-0.1	39	NSD
18. Meeting-Observing New People	1.2			-0.9			1.2			0.0			
Meeting New People		1.4	31		-0.3	40		1.4	30		0.4	36	3,1>2
Observing Other People		0.6	40		-1.5	42		1.0	34		-0.4	42	3,1>2

[a]Calculations for each domain or scale are based on at least the number of respondents indicated by N.

[b]Means are based on responses to a nine-point response format ranging from +4 (most strongly adds) to -4 (most strongly detracts). See Appendix B for a more detailed presentation of activity group REP statistics.

[c]Rank orders are based on mean scores on the REP scales, with tied scores given the same rank.

[d]This column indicates that each activity group (1-4) to the left of the ">" has a mean that is significantly greater than the mean of each group to the right, based on the Student-Newman-Keuls test ($p \leq .05$). Some REP scales showed no significant differences (NSD) between the activity groups.

notation in the column indicated that "no significant differences" were found between any of the activity group means for the appropriate REP scale.

Overall, 10 of the 42 REP scales reported in this study show differences between the means of at least two of the most important activity groups. Ocean fishermen and roadside users enjoy interaction with people and place less value on Tranquility and Privacy than backcountry users and nature observers. Ocean fishermen are further characterized by their lower means on Scenery, General Nature Experience, and Introspection. Two distinctive recreation motives of roadside users in the King Range are their preferences for agreeable temperatures and the higher value they place on recreating with the family.

The differences existing between specific activity groups tend to support intuitive judgments concerning the expected and desired experiences associated with particular activities. For example, backcountry users, by the nature of their activity and the environment where they engage in that activity, generally encounter fewer people than users participating in other activities. Their higher means on the escape-related dimensions and lower means on the scales in the Meeting - Observing New People domain support the conclusion that backcountry users do value a low level of interaction with other people.

REP mean differences between identifiable subgroups of recreationists are all supported by statistical criteria for significance. Yet, some of those differences are difficult to interpret or too small to be meaningful from a managerial perspective. There is no general rule that specifies the proper size of a relevant difference. Intuitively, scales defining concepts most dependent on the resource, using the resource as an active ingredient

or agent to deliver the experience opportunities, and having the highest absolute mean differences between subgroups of recreationists will tend to be the most relevant to resource planners and managers.

While it is difficult to interpret all the differences on the REP scales, the data displayed in Tables 11 and 12 clearly indicate that recreationists visiting the King Range realize a variety of recreation experiences, and distinct patterns of experience preferences are identifiable for specific activity groups. Close inspection of the individual group mean differences on the REP scales is necessary to identify the preference patterns most relevant to land management today. Some of those managerial applications of the REP data are discussed in the last section (Summary and Discussion) of this report.

Management Action Preferences

The recreationists in the King Range sample were asked to rate the degree they favored or opposed 17 specific "possible" management actions and to make recommendations for wilderness designations within the King Range. This section summarizes the answers to the questions about users' management and wilderness preferences. Included in this summary are: (1) responses of the overall sample of King Range recreationists to the possible management actions; (2) differences between users belonging to identifiable subgroups of recreationists in their preferences for the possible management actions; and (3) wilderness definitions and recommendations provided by the respondents.

Possible management actions that could bring increased use to the King Range area and required the greatest development were favored the least (opposed) by the respondents (Table 13). A visitor center, improved camper trailer facilities, improved road quality, and upgraded access roads were

Table 13. Management item means and standard deviations for all respondents sampled in the King Range NCA (Summer, 1979).

Possible Management Actions	Mean[a]	S.D.[b]	Rank Order[c]
Expand the present hiking trails to connect the King Crest Trail system to beach areas.	2.5	2.0	1
Maintain closure of beach areas to motor vehicle use near archaeological sites.	2.5	2.5	1
Maintain closure of beach areas to motor vehicle use between Gitchell Creek and the Mattole River.	2.0	2.9	3
Provide drinking water, toilets, and trash receptacles at the trailhead of the King Crest Trail.	2.0	2.4	3
Provide drinking water, toilets, and trash receptacles at the Black Sands Beach near Telegraph Creek.	1.9	2.6	5
Designate some areas in the King Range NCA as wilderness.	1.9	2.7	5
Provide drinking water, toilets, and trash receptacles at the mouth of the Mattole River.	1.7	2.8	7
Interpretive information describing natural history, cultural and archaeological sites.	1.2	2.5	8
More locational and directional signs.	1.1	2.6	9
More maps and brochures.	1.1	2.6	9
More ranger personnel.	.5	2.5	11
Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek.	-.2	3.1	12
Permit motor vehicle use on beach areas between Punta Gorda and the Mattole River.	-.6	3.3	13
A visitor center.	-.7	2.8	14
Improved camper trailer facilities.	-.8	3.1	15
Improving the road quality within the King Range NCA.	-.9	3.0	16
Upgrading the access roads to the King Range NCA.	-1.0	3.1	17

[a]Means are based on responses to a nine-point response format ranging from +4 (very strongly favor) to -4 (very strongly oppose). Calculations for each management action were based on at least N=195 respondents.

[b]Standard deviation (S.D.) is a measure of variation in the responses around the mean score.

[c]Rank orders are based on mean scores on the possible management actions, with tied scores given the same rank.

all opposed by respondents when they were asked to rate whether they favored or opposed 17 management actions. Responses were recorded on a Likert response format ranging from +4 (very strongly favor) to -4 (very strongly oppose). Eleven of the management actions have positive values, indicating the respondents generally favored these actions. While means indicate seven of these actions were favored "moderately," only two of them outline a significant change in the management of the King Range. These are the expansion of the hiking system between the King Crest and the beach areas, and the designation of some areas as wilderness in the King Range. The other items favored more than "slightly" describe management actions maintaining the status quo (no change) or focus on light facility improvement (drinking water, toilets, and trash receptacles) in day use or access areas. Overall, the King Range respondents favored most those management actions that would improve the conditions and quality of experiences for users once they were in the King Range, but favored the least or opposed actions that might increase use of the area.

While some interesting information is evident from the overall means, closer examination of Table 13 indicates that several items have large standard deviations, reflecting considerable disagreement among respondents. Standard deviations give one measure of the variability of responses around the means. Most of the standard deviations in Table 13 are large, indicating that the respondents varied quite a bit in their preferences, resulting in answers widely distributed around the means. This dispersion of answers is illustrated in Table 14 by the percentage distribution of answers in each response category. For example, the mean value for the management action proposing continued motor vehicle use of beach areas between Telegraph and

Table 14. Preferences for possible management actions of respondents sampled in the King Range NCA (Summer, 1979).

Possible Management Actions	Very Strongly Favor (+4) Percent[a]	Strongly Favor (+3) Percent[a]	Moderately Favor (+2) Percent[a]	Favor A Little (+1) Percent[a]	Neutral (0) Percent[a]	Oppose A Little (-1) Percent[a]	Moderately Oppose (-2) Percent[a]	Strongly Oppose (-3) Percent[a]	Very Strongly Oppose (-4) Percent[a]	Number of Respondent
Expand the present hiking trails to connect the King Crest Trail system to beach areas.	46	19	14	4	9	1	2	2	3	203
Maintain closure of beach areas to motor vehicle use near archaeological sites.	63	9	6	3	7	2	2	2	8	198
Maintain closure of beach areas to motor vehicle use between Gitchell Creek and the Mattole River.	60	8	5	3	5	2	5	4	11	204
Provide drinking water, toilets, and trash receptacles at the trailhead of the King Crest Trail.	38	14	19	5	10	2	2	1	9	201
Provide drinking water, toilets, and trash receptacles at the Black Sands Beach near Telegraph Creek.	42	13	16	4	8	2	4	2	10	202
Designate some areas in the King Range NCA as Wilderness.	46	10	14	3	9	3	3	2	10	195
Provide drinking water, toilets, and trash receptacles at the mouth of the Mattole River.	41	13	16	5	6	2	3	3	12	203
Interpretive information describing natural history, cultural and archaeological sites.	22	13	21	13	12	3	3	3	11	198
More locational and directional signs.	21	14	19	14	11	1	4	3	13	201
More maps and brochures.	20	14	17	15	15	2	2	3	13	198
More ranger personnel.	14	11	17	11	21	5	5	3	14	199
Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek.	19	7	12	7	13	2	6	6	29	199
Permit motor vehicle use on beach areas between Punta Gorda and the Mattole River.	20	7	11	5	6	2	6	6	39	198
A visitor center.	11	5	12	10	13	6	8	11	27	200
Improved camper trailer facilities.	19	5	3	9	9	3	8	7	36	203
Improving the road quality within the King Range NCA.	12	7	6	12	8	5	9	6	36	201
Upgrading the access roads to the King Range NCA.	14	7	6	7	7	4	8	8	38	203

[a]Percentages are based on the total number of respondents answering each possible management action.

Gitchell Creeks was -0.2. Sixty-one percent of the responses were in extreme categories near the scale end-points, while only 15 percent were in response categories near the mean. This information, along with the means and standard deviations (Table 13), gives a clearer picture of the response patterns.

Preferences of Recreationists from Selected Subgroups of King Range Users

Distinct patterns in the preferences of users categorized by most important activity are evident in the mean differences across the possible management actions. Analysis of all 17 management items using a Student-Newman-Keuls test ($p \leq .05$) revealed mean differences between activity groups on nine items (Table 15). The largest mean difference between activity groups occurs between roadside users and backcountry users on the possible management action proposing improved camper trailer facilities. The roadside users moderately favored that action, while the backcountry users moderately opposed it. For that management action, the right-hand column of Table 15 indicates that roadside users (group 1) favored improved camper trailer facilities significantly more than any other activity group (3, 4, or 2). Recreationists from these two user groups differ on all (six) of the management actions specifying development of facilities and on actions that would increase or improve areas for motor vehicle use. Roadside users are development oriented and have the highest means on most of the management objectives. In contrast to these users are the backcountry users who have lower means and oppose six of the seven management actions that are focused on motor vehicle use and development in and around King Range access areas. On most of the management actions the ocean fishermen and nature observers fall between the extremes defined by the other activity groups. Means close to neutral on most of the management actions showing differences

Table 15. Management items showing significant differences between mean responses of groups based on most important activity of respondents sampled in the King Range NCA (Summer, 1979).

Possible Management Actions	Activity Groups: 1 Roadside Users (N=25)[a] Mean[b]	2 Backcountry Users (N=71)[a] Mean[b]	3 Ocean Fishermen (N=39)[a] Mean[b]	4 Nature Observers (N=22)[a] Mean[b]	Groups That Differ Significantly[c]
Expand the present hiking trails to connect the King Crest Trail system to beach areas.	2.6	2.8	1.8	3.1	4>3
Designate some areas in the King Range NCA as wilderness.	2.1	2.9	.4	2.5	2,4,1>3
Interpretive information describing natural history, cultural and archaeological sites.	2.1	1.6	.2	2.0	1,4,2>3
Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek.	.7	-1.7	.4	-.1	1,3,4>2
Permit motor vehicle use on beach areas between Punta Gorda and the Mattole River.	.6	-2.1	-.2	-1.0	1,3>2
A visitor center.	.5	-.9	-1.3	.5	1,4>3
Improved camper trailer facilities.	1.9	-2.0	.4	-1.7	1>3>4,2
Improving the road quality within the King Range NCA.	1.6	-1.5	-.6	-.8	1>3,4,2
Upgrading the access roads to the King Range NCA.	1.2	-1.8	-.5	-1.6	1>3,4,2

[a] Calculations for each management item are based on at least the number of respondents indicated by N.

[b] Means are based on responses to a nine-point response format ranging from +4 (very strongly favor) to -4 (very strongly oppose). See Appendix C for a more detailed presentation of management item statistics for activity groups.

[c] This column indicates that each activity group (1-4) to the left of the ">" has a mean that is significantly greater than the mean of each group to the right, based on the Student-Newman-Keuls test ($p \leq .05$). These are the only significant differences between any of the activity group means for each management item.

indicate that ocean fishermen do not have strong opinions about what happens in the King Range, and might be most pleased with no changes in the management. This could be due in part to the orientation or focus of their activity toward resource opportunities outside the King Range. They do have relatively strong opinions in opposition to a visitor center. The nature observers, while not as neutral as the ocean fishermen, fall consistently between the extremes defined by the roadside and backcountry users. Only on the management action calling for an expansion of the trail system do they clearly distinguish themselves. They favor that action significantly more than ocean fishermen.[22]

The Student-Newman-Keuls test was also performed on the 17 management actions for respondents grouped by their driving time to the King Range. Table 16 indicates that only one significant difference was found between these groups. Respondents from outside the state of California favored wilderness designation for parts of the King Range significantly more than those who lived within a one- to four-hour drive from the area. The lack of significant difference on any of the other 16 management items indicates that this variable, driving distance, does not account for much of the variation in the responses to the possible management actions. Variation appears to be as high within the driving distance groups as between them.

In contrast to driving distance, respondents' number of previous visits (familiarity) to the King Range explains more variation in responses to the possible management actions. Overall, mean differences between two or more of the five previous visits groupings were evident on nine management

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[22]Table C-2, Appendix C, contains the mean, standard deviation, and number of respondents for each management item by most important activity groups.

Table 16. Management items showing significant differences between mean responses of groups based on driving time to the King Range NCA from the residence of respondents sampled in the King Range NCA (Summer, 1979).

Possible Management Actions	Residence Groups[a] 1 Within One Hour (N=19)[b] Mean[c]	2 One to Four Hours (N=47)[b] Mean[c]	3 Other Calif. (N=107)[b] Mean[c]	4 Out-of-State (N=16)[b] Mean[c]	Groups That Differ Significantly[d]
Designate some areas in the King Range NCA as wilderness.	2.2	0.9	2.1	3.1	4>2

[a]Residence is based on zip code of respondent's permanent address.

[b]Calculations for this management item are based on the number of respondents indicated by N.

[c]Means are based on responses to a nine-point response format ranging from +4 (very strongly favor) to -4 (very strongly oppose).

[d]This column indicates that each residence group (1-4) to the left of the ">" has a mean that is significantly greater than the mean of each group to the right, based on the Student-Newman-Keuls test ($p \leq .05$). These are the only significant differences between any of the residence group means for each management item.

actions (Table 17). One major conclusion is apparent from these differences. Experienced King Range users favor development and improvement in the King Range significantly less than users who have visited the area fewer than four times.

Users engaging in recreation in the northern part of the King Range oppose certain specific management actions more than recreationists around Shelter Cove. Respondents who indicated the zone in which they recreated were grouped by their area of recreation participation and tested for differences in management action preferences. Only three zones had sample sizes large enough for this analysis. Whereas means from users in the Punta Gorda area indicate a neutral or negative orientation toward management alternative specifying development, Shelter Cove users had a positive outlook on these management actions and "moderately" favored three of the actions "slightly" opposed by the northern recreationists (Table 18). Zone 2 is geographically between zones 1 and 3, which characterizes the preferences of zone 2 users on the management actions. Means of zone 2 users fall between the corresponding values of zone 1 and zone 3 users on all six of the management actions listed in Table 18.

Wilderness Definitions and Recommendations

Respondents were asked to provide their own definition of wilderness, and 84 percent of all respondents complied. Over half (53 percent) of those who did define wilderness mentioned land in an unspoiled, natural state. Thirty-five percent of the definitions specified no motor vehicles. Other frequently mentioned qualities of wilderness were no man-made improvements (31 percent) and little human impact (23 percent).

Respondents who favored wilderness preservation for some parts of the King Range (management item six) were asked to identify specific areas

Table 17. Management items showing significant differences between mean responses of groups based on total number of visits of respondents sampled in the King Range NCA (Summer, 1979).

Possible Management Actions	Groups Based on Total Number of Visits[a] 1 (1)[b] (N=48)[c] Mean[d]	2 (2-3)[b] (N=34)[c] Mean[d]	3 (4-6)[b] (N=29)[c] Mean[d]	4 (7-15)[b] (N=25)[c] Mean[d]	5 (over 15)[b] (N=46)[c] Mean[d]	Groups That Differ Significantly[e]
Expand the present hiking trails to connect the King Crest Trail system to beach areas.	3.0	3.4	2.1	2.4	1.6	2>3,5 and 1>5
Provide drinking water, toilets, and trash receptacles at the trailhead of the King Crest Trail.	2.2	2.8	1.9	1.2	1.5	2>4
Provide drinking water, toilets, and trash receptacles at the Black Sands Beach near Telegraph Creek.	2.3	2.9	1.8	.9	1.6	2>4
Designate some areas in the King Range NCA as wilderness.	2.8	2.1	2.2	2.2	.8	1>5
More maps and brochures.	1.6	2.1	.7	-.5	.7	2,1>4
More ranger personnel.	1.5	.9	.7	-.1	-.3	1>4,5
A visitor center.	.3	-.4	-.7	-1.4	-1.6	1>4,5
Improving the road quality within the King Range NCA.	.1	-.2	-.9	-1.9	-1.7	1>4
Upgrading the access roads to the King Range NCA.	-.3	0.0	-1.2	-2.5	-1.5	2,1>4

[a] Total number of visits made to the King Range NCA.

[b] Response range indicating total number of visits by each respondent in that group.

[c] Calculations for each management item are based on at least the number of respondents indicated by N.

[d] Means are based on responses to a nine-point response format ranging from +4 (very strongly favor) to -4 (very strongly oppose).

[e] This column indicates that each experience group (1-5) to the left of the ">" has a mean that is significantly greater than the mean of each group to the right, based on the Student-Newman-Keuls test ($p \leq .05$). These are the only significant differences between any of the experience group means for each management item.

Table 18. Management items showing significant differences between mean responses of groups based on zone in which respondents engaged in their most important activity in the King Range NCA (Summer, 1979).

Possible Management Actions	Zone[a] 1 (N=14)[b] Mean[c]	2 (N=15)[b] Mean[c]	3 (N=19)[b] Mean[c]	Zones That Differ Significantly[d]
Provide drinking water, toilets, and trash receptacles at the mouth of the Mattole River.	-0.5	1.4	2.4	3>1
More locational and directional signs.	-0.4	1.2	2.0	3>1
More maps and brochures.	-0.2	1.8	2.3	3,2>1
Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek.	-1.8	-1.0	0.8	3>1
A visitor center.	-2.1	-0.8	0.5	3>1
Improved camper trailer facilities.	-2.6	-1.6	0.1	3>1

[a]Zones having fewer than 12 respondents are not included in this analysis.

[b]Calculations are based on at least the number of respondents indicated by N.

[c]Means are based on responses to a nine-point response format ranging from +4 (very strongly favor) to -4 (very strongly oppose).

[d]This column indicates that each zone (1-3) to the left of the ">" has a mean that is significantly greater than the mean of each zone to the right, based on the Student-Newman-Keuls test ($p \leq .05$). These are the only significant differences between any of the zone means for each management item.

which they felt would be appropriate for wilderness designation. Sixty-eight percent of the respondents favored wilderness designation to some degree, and 55 percent of these made specific recommendations. Table 19 shows the areas which were recommended by those respondents who both favored wilderness designation and provided a reasonable definition of wilderness. The most common recommendations were for the entire area and for the King Crest Trail system. Each of these were recommended by 27 percent of the respondents answering this question. Other areas receiving substantial support were Spanish Flat to Big Flat and Big Flat to Gitchell Creek.

Table 19. Recommendations for wilderness designation by respondents sampled in the King Range NCA (Summer, 1979).[a]

Wilderness Recommendations	Number of Responses	Percentage[b]
Entire Area	20	27
King Crest Trail System	20	27
Spanish Flat to Big Flat	15	20
Big Flat to Gitchell Creek	12	16
Crest to the Coast	11	15
Mouth of the Mattole River to Punta Gorda	10	13
Entire Coastal Area	9	12
Punta Gorda to Spanish Flat	9	12
Chemise Mountain Area	6	8
Gitchell Creek to Telegraph Creek	4	5
Queen Peak Area	2	3
Other	6	8

[a]Recommendations in this table were made by those respondents who both favored wilderness designation on possible management action number 6 on the questionnaire and provided a reasonable definition of wilderness.

[b]Percentage values are calculated based on N=75 respondents answering this question.

IV. PILOT STUDY OF THE ELEMENTS OF THE RECREATION OPPORTUNITY SPECTRUM SYSTEM

One objective of this research was to pilot test questions to verify users' preferences for the recreation setting characteristics incorporated in the Recreation Opportunity Spectrum (ROS) system for inventorying and classifying recreation resources. The selection of specific characteristics was based on the resource, social, and managerial features which were considered most relevant to ROS class identification. The King Range research incorporated two different question formats to elicit user preferences for the ROS characteristics.

Recreation Opportunity Spectrum Questions

Two separate ROS question formats were pilot tested during the King Range study. One of those formats asked respondents to mark a recreation location on a map that was representative of the area where they recreated in their most important activity. Then, based on what they could recall about the area, they identified specific resource, social, and managerial characteristics that they felt were representative of their recreation location.[23] The second ROS format was distributed to a separate sample of users to determine which specific characteristics (defined in the ROS guidelines) the recreationists liked, and which composite ROS settings were preferred.[24] The data collected from the King Range users from each format are discussed below.

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[23]Refer to Appendix A, Figure A-2 (Buff) - Section VII for example.

[24]Refer to Appendix A, Figure A-3 (Blue) - Section VII for example.

ROS Characteristics of the Recreation Environment Actually Visited by King Range Users

Twelve resource, social, and managerial characteristics pertinent to the ROS inventory were rated by each respondent. Recreationists placed a check in one of seven spaces between labeled end-points (semantic differentials) which best described the area where their recreation participation took place. Table 20 shows the distribution of responses for each characteristic. More than one-third of the respondents engaged in their most important activity in an area which they felt had no visitor facilities, offered a good opportunity for outdoor challenge, and provided opportunities to realize a sense of remoteness or isolation from civilization. Overall, many of the characteristics showed a wide distribution of responses across the seven response categories.

Since many of the characteristics described the same general concept, individual characteristics were grouped (clustered) into broader categories, each describing one general ROS characteristic.[25] The categories were size of area, amount of regulation, amount of development, opportunities for challenge and use of outdoor skills, and remoteness of area. The means across all respondents for each of these characteristics groups are specified in Table 21. Means near 1.0 on any of the characteristics are indicative of the primitive end of the spectrum, while means near 7.0 describe more developed conditions. The two scales having means closest to 1.0 (the primitive end of the spectrum) are amount of development in the area and opportunities for challenge and use of outdoor skills. The means for these characteristics (2.5 and 2.6, respectively) indicate that users felt

[25]I-Clust was used to group the characteristics into scales (clusters). Appendix D, Table D-1 documents the characteristics belonging to each cluster. Means, standard deviations, and number of respondents are listed along with the Cronbach alpha values for reliability of each scale.

Table 20. Respondent's perceptions of the characteristics of the area in which they engaged in their most important activity in the King Range NCA (Summer, 1979).[a]

	Percentage of Responses in Each Category[b]								Number of Respondents
Large[c]	25	11	18	16	13	2	16	Small[c]	56
Had no facilities for visitor use	34	28	13	10	9	3	4	Had many facilities for visitor use	79
Offered many opportunities for outdoor challenges	34	19	20	17	9	0	1	Offered no opportunities for outdoor challenges	79
Sights and sounds of man were practically non-existent	24	21	14	9	10	10	13	Sights and sounds of man were quite evident	80
Had no other users	12	25	8	21	7	20	9	Had many other users	77
Offered many opportunities to use outdoor skills	31	21	13	23	8	4	1	Offered no opportunities to use outdoor skills	80
Provided good opportunities to realize a sense of remoteness or isolation from civilization	39	23	13	11	5	6	3	Provided no opportunities to realize a sense of remoteness or isolation from civilization	79
Demanded much physical effort to reach your destination	3	14	19	21	10	15	19	Demanded little physical effort to reach your destination	80
Management actions and controls were not apparent	20	25	13	18	9	4	13	Management actions and controls were very apparent	80
No motorized vehicles were present	24	15	14	11	11	10	15	Many motorized vehicles were present	80
Provided good opportunities to get far away from roads with motorized vehicles	20	17	8	17	10	10	18	Provided no opportunities to get far away from roads with motorized vehicles	77

[a]Some items have been rearranged for this table such that all of the less developed conditions are on the left and the most developed conditions are on the right.

[b]Percentage may not total 100 due to rounding.

[c]These descriptions are the labeled endpoints of a seven-point response format or scale. Respondents checked one of the seven blank spaces between the endpoints according to their perceptions of the characteristics of the area in which they engaged in their most important activity. (See Appendix A, Figure A-2 (Buff), Question VII).

Table 21. Means and standard deviations for respondents' perceptions of the area where they engaged in their most important activity in the King Range NCA (Summer, 1979).

Characteristics[a]	Mean[b]	Standard Deviation[c]	Number of Respondents
1. Size of area (1 = large; 7 = small)	3.5	2.1	56
2. Amount of regulation at area (1 = none; 7 = much)	3.3	2.0	80
3. Amount of development at area (1 = none; 7 = much)	2.5	1.7	79
4. Remoteness of area (1 = very remote; 7 = not remote)	3.3	1.6	80
5. Opportunities for challenge and use of outdoor skills (1 = many; 7 = none)	2.6	1.4	80

[a]These characteristics are described by the endpoints (in parentheses) of a seven-point response format. Characteristics 4 and 5 are each combinations of several items on the questionnaire which describe the same general concept. Refer to Appendix D, Table D-1 for more details.

[b]Means are based on responses to a seven-point response format.

[c]Standard deviation (S.D.) is a measure of variation in the responses around the mean score.

the area where they recreated in the King Range was not very developed and offered opportunities for challenge and use of outdoor skills. Responses on the remoteness scale averaged approximately halfway between very remote (1.0) and not very remote (7.0).

Mean differences from a Student-Newman-Keuls test between the four most important activity groups on the scales delineating the ROS characteristics are displayed in Table 22. Only one difference was isolated on any of the scales. The ocean fishermen found the area to be significantly less remote than did either the backcountry users or the nature observation group. The latter two groups of recreationists, who probably spent more time in the backcountry, tended to rate those environments toward the primitive end of the spectrum.

Comparison of the ROS Characteristics of the Area Actually Visited by Zone. While the analysis discussed above describes the kind of information obtained on respondents' perception of the characteristics of the area where they engaged in recreation, more relevant information is obtained if the zone (area) where the recreation occurred is tied to the perceptions of the area. Recalling that respondents were asked to indicate on a map one specific area where they participated the most in their most important activity, the coding and zone boundaries where the recreation occurred are delineated in Figure 1.[26] The percentages and number of respondents engaging in recreation in each zone were previously discussed and are listed in Table 9.

Three major use zones were selected to compare mean differences between zones in user perceptions of the characteristics of their zone. The zones having adequate sample sizes for the Student-Newman-Keuls test for

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[26]It is important to remember that the King Range was not zoned for ROS classes. The zones mentioned here are only used to categorize recreation participation by area.

Table 22. Significant differences between respondents' perceptions of the characteristics of the area where they recreated. Respondents were grouped by their most important activity in the King Range NCA (Summer, 1979).

Characteristics[a]	Activity Groups 1 Roadside Users (N=12)[b] Mean[c]	2 Backcountry Users (N=29)[b] Mean[c]	3 Ocean Fishermen (N=13)[b] Mean[c]	4 Nature Observers (N=10)[b] Mean[c]	Groups That Differ Significantly[d]
1. Remoteness of area (1 = very remote; 7 = not remote)	4.0	2.9	4.6	3.1	3>4,2

[a]These characteristics are described by the end-points (in parentheses) of a seven-point response format. Characteristic 1 is a combination of several items on the questionnaire which all describe the same general concept. Refer to Appendix D, Table D-1, for more details.

[b]Calculations are based on the number of respondents indicated by N.

[c]Means are based on responses to a seven-point response format.

[d]This column indicates that each activity group (1-4) to the left of the ">" has a mean that is significantly greater than the mean of each group to the right, based on the Student-Newman-Keuls test ($p < .05$). These are the only significant differences between any of the activity group means for each characteristic.

differences were zones 1, 2, and 3 (Table 23). Two of the area characteristic scales, amount of development and remoteness of area, showed significant differences between users in different zones. Respondents from zone 3 had the highest means on the three characteristics showing differences. This indicates that people visiting zone 3 consistently perceived it to be the least primitive area, when compared to respondent perceptions of area characteristics in the other zones. Visitors to the other two zones (1 and 2) are less uniform in their response patterns, but generally rate their zones more toward the primitive end than the developed end of the spectrum.

People's Preferences for Recreation Opportunity Spectrum Settings and Characteristics

The second ROS format examined recreationists' overall preferences for five ROS settings and their preferences for the characteristics comprising each of those settings, regardless of where they recreated in the King Range. Therefore, these analyses tapped users' preferences for the types of settings they would prefer to engage in when doing their most important activity in the King Range, and not what their perceptions were of the area where they engaged in that activity in the King Range. This subsample of users received five lists of characteristics, each describing a different recreation setting (intended to represent characteristics of primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, and semi-rural recreation environments). Eight characteristics were used to describe each setting. Respondents were then asked to indicate whether they liked, disliked, or considered unimportant each listed characteristic based on recreation in their most important activity.[27] This question was primarily

[27]The percentage of responses in each category for all the characteristics is in Appendix D, Table D-2.

Table 23. Significant differences between respondents' perceptions of the characteristics of the area where they recreated. Respondents were grouped by the zone (area) where they recreated in the King Range NCA (Summer, 1979).

Characteristics[b]	Zone[a] 1 (N=15)[c] Mean[d]	2 (N=13)[c] Mean[d]	3 (N=18)[c] Mean[d]	Zones That Differ Significantly[e]
1. Amount of development of area (1 = none; 7 = much)	1.5	1.9	3.2	3>2,1
2. Remoteness of area (1 = very remote; 7 = not remote)	2.3	1.9	5.1	3>1,2

[a]Zones which have fewer than 12 respondents are not included in this analysis.

[b]These characteristics are described by the end points (in parentheses) of a seven-point response format. Characteristic 2 is a combination of several items on the questionnaire which all describe the same general concept. Refer to Appendix D, Table D-1 for more details.

[c]Calculations are based on at least the number of respondents indicated by N.

[d]Means are based on responses to a seven-point response format.

[d]This column indicates that each zone (1-3) to the left of the ">" has a mean that is significantly greater than the mean of each zone to the right, based on the Student-Newman-Keuls test ($p \leq .05$). These are the only significant differences between any of the zone means for each characteristic.

used to familiarize the respondents with the characteristics of each setting. A second question, using a seven-point response format ranging from +3 (very favorable) to -3 (very unfavorable), asked respondents to rate how favorable each of the five settings would be to them for participation in their listed most important activity.

Recreation users visiting the King Range felt the bundles of characteristics describing both the primitive and the semi-primitive non-motorized setting were the most favorable for recreation participation (Table 24). This is contrasted to the -1.8 mean (moderately unfavorable) shown for the characteristics describing a semi-rural setting. Respondents were neutral to and "slightly" in favor of the roaded natural and semi-primitive motorized environments, respectively.

Most important activity groupings explained no significant variation in the responses of users to the five recreation settings. Although the Student-Newman-Keuls test was used to isolate differences between the activity group means, no significant differences were found.

Table 24. Recreation setting preference means for all respondents sampled in the King Range NCA (Summer, 1979).

Recreation Settings	Mean[a]	S.D.[b]	Rank Order[c]
Setting 1 - Primitive	2.1	1.4	1
Setting 2 - Semi-Primitive Non-Motorized	2.1	1.3	1
Setting 3 - Semi-Primitive Motorized	1.4	1.5	3
Setting 4 - Roaded Natural	0.3	2.0	4
Setting 5 - Semi-Rural	-1.8	2.0	5

[a]Means are based on responses to a seven-point response format ranging from +3 (very favorable) to -3 (very unfavorable). Calculations are based on at least N=81 respondents.

[b]Standard deviation (S.D.) is a measure of variation in the responses around the mean score.

[c]Ranks are based on mean scores on the recreation setting items, with tied scores given the same rank.

V. SUMMARY AND DISCUSSION

The primary objectives of this research were to identify and quantify the recreation experience preferences of users visiting the King Range National Conservation Area and to pilot test ROS questions exploring linkages between recreation activities, settings, and preferences. Several other objectives are listed in the introduction to this report. These sub-objectives were developed as the research progressed based on information needs expressed by managers. Since much of the information from the sub-objectives has more direct application and relevance to immediate information needs of managers (especially at the District level), those results are summarized and discussed in this section along with the user preferences for recreation experiences and specific ROS characteristics.

Summary

Overall Sample Summary

The average age of the King Range users was 41 years, with almost two-thirds of the sample being between 26 and 50 years old. Much smaller segments of the user group were under 25 (11 percent) or over 65 (6 percent). Eighty percent of the respondents were male. The mean educational level was 15 years of schooling with one-quarter of the users having no education beyond high school level and slightly more than one-quarter having some post graduate education. Nearly half of the recreationists responding to the questionnaire lived in communities with populations of 25,000 or less, while almost one-quarter were from cities of over one-half million people.

Ninety-two percent of the recreationists sampled in the King Range lived in California. Only 10 percent of the recreationists sampled lived within a one-hour drive of the King Range, but one-quarter of them lived between one and four hours away. More than half lived in California, but further than a four-hour drive from the King Range.

Many of the recreationists sampled had made repeat visits to the King Range. One-quarter of these had visited the area more than 15 times. At the other extreme, twenty-six percent had been contacted for the study on their only King Range visit.

The recreationists participated in a variety of activities during their visits to the King Range. Eighty-five percent had engaged in hiking or walking in the area. At least half of them had also engaged in wildlife viewing, photography, sightseeing, camping near their auto, and picnicking.

When asked to indicate their "most important" activity (the activity they had enjoyed the most or spent the most time doing during their visit), one-third of the respondents checked hiking/walking and one-fifth chose ocean fishing. Camping near autos, sightseeing, nature study, and camping away from autos were each the most important activity of about 5 percent of the recreationists.

The major focus of this research was the quantification of user preferences for each of 42 scales measuring identifiable recreation outcomes. Respondents were asked to indicate whether specific recreation experience preference (REP) items describing each REP scale added to or detracted from their satisfaction while engaging in their "most important" activity in the King Range. Overall, the King Range users indicated that 12 of the REP scales measured experiences which "strongly added" to their recreation satisfaction.

Of these, experiencing the Scenery and Escaping Crowds added the most to visitor satisfaction. Other high ranking recreation experiences included Seeking Open Space, General Nature Experience, and Escaping Role Overloads. The general concepts (REP domains) which included the majority of these highly preferred experiences are Relationships with Nature, Escaping both Physical and Personal-Social Pressures, and Exercise/Physical Fitness. While the REP item means indicated that none of the listed recreation experiences detracted from user satisfaction, several were ranked as neutral, neither adding to nor detracting from recreation satisfaction. These were for the scales Social Recognition, Leading Others, Risk Taking, Risk Avoidance, and Observing Other People.

Seventeen "possible" management actions were presented to respondents with a nine-point response format ranging from "very strongly favor" to "very strongly oppose." Two of the actions were strongly favored by the respondents as a whole: expanding the present hiking trails to connect the King Crest Trail system to beach areas, and maintaining closure to motor vehicles of beach areas near archaeological sites. Five of the possible actions were opposed "a little" by respondents, and focused on items regarding improvement of road conditions in and leading to the King Range. None of the management items suggesting potential or continued use of motor vehicles on beach areas were favored by the group as a whole.

Sixty-eight percent of the respondents favored wilderness designation for parts of the King Range. Of these, 55 percent recommended specific areas for wilderness designation. Twenty-seven percent of the respondents making recommendations favored wilderness designation for the entire area and an equal percentage recommended the King Crest Trail system.

A subsample of the recreationists were asked to indicate an area in the King Range where they had engaged in their most important activity and to rate their perceptions of that area. These responses indicated that about three-fourths of the recreation use occurs in zones 1, 2, and 3 (see Figure 1 for the location of these zones). The respondents' perceptions of the area where they recreated indicated that for size, amount of regulation, and remoteness, they found the area to be about midway between the scale end-points of very large, unregulated, and remote (on one extreme) and very small, highly regulated, and unremote (on the other extreme). They characterized the area as more toward the primitive end of the spectrum in terms of the amount of development and the opportunity for challenge. In addition, users in zone 3 considered that area to be more developed and less remote than users of zones 1 and 2. Zone 3 users also favored possible management actions involving provision of more facilities and information than users of zone 1. It would appear that users of remote or less used zones are less in favor of facilities and development than users in zones which are more developed and less remote.

A second subsample of recreationists indicated that they preferred a primitive or semi-primitive recreation setting the most for engaging in their most important activity in the King Range.

Summary of Activity Group Differences

Based on the respondents' "most important" activities, four most important activity groups were established to compare the preferences of users engaged in different recreation activities in the King Range. Several of these groups combine users who participated in similar activities. The four most important activity groups were:

1) Roadside Users

2) Backcountry Users

3) Ocean Fishermen

4) Nature Observers

Analysis of variance, in conjunction with Student-Newman-Keuls tests ($p \leq .05$), was used to identify significant differences between these groups in their mean responses to the items on the questionnaire. Statistically significant differences which characterize the four activity groups are discussed below.

Roadside Users. Comprising 12 percent of the entire sample, roadside users included all respondents whose most important activity was either camping near auto, sightseeing/auto driving, or picnicking. Over half of this group made only one visit to the King Range.

As a group, the roadside users were older than the backcountry users or the nature observers. They differed from the nature observers by placing a higher value on Family Togetherness and more agreeable temperatures and from several groups in the lower value placed on Privacy.

On the management items, roadside users differed from all other activity groups by being more in favor of improved camper trailer facilities and improved access and road quality within the King Range. Since road improvement would probably bring more people to the King Range, the roadside users' support for road improvements seems to be consistent with their lower emphasis on privacy.

Backcountry Users. This group of recreationists, whose most important activity was either hiking/walking or camping away from auto, made up 38 percent of the recreation sample. As a group, these recreationists were

better educated than the ocean fishermen and were younger than either the ocean fishermen or the roadside users.

Backcountry users were distinguished from several other activity groups by the greater contribution Tranquility and Privacy made to their perceived satisfaction. Consistent with this, they felt that Meeting New and Observing Other People moderately detracted from their recreation experience.

The backcountry users registered the strongest opposition to continued or potential motor vehicle use on beach areas. Additionally, they scored lowest on most of the management actions sponsoring development in the King Range.

Ocean Fishermen. Twenty-one percent of the recreationists indicated that ocean fishing was most important for their visit to the King Range. This group was older than either the backcountry users or the nature observers and had fewer years of formal schooling than the backcountry users. More than 40 percent of these recreationists had made more than 30 visits to the King Range.

Scenery, General Nature Experience, and Introspection added less to ocean fishermen's recreation satisfaction than to that of any other activity group. They also valued Privacy and Tranquility less than some of the other groups. Meeting New and Observing Other People added more to their satisfaction than to that of the backcountry users.

This group tended to rate most of the controversial management actions near neutral. Since many of these management actions might not affect their recreation opportunities, as a group they do not have strong opinions. Yet, they favored interpretive information, expansion of the hiking trails, wilderness designation, and a visitor center significantly less than some of

the other groups. These attitudes are reflected in the relatively low contribution of Scenery and General Nature Experience to their recreation satisfaction.

Nature Observers. This group, which accounts for 12 percent of the sample, includes all respondents whose most important activities were nature study, wildlife viewing, or photography. They were younger than both the roadside users and ocean fishermen.

Nature observers derived more satisfaction from Privacy and Creativity than several of the other activity groups. Agreeable Temperature and Family Togetherness were less important to them than to the roadside users.

Nature observers' management action preferences were the least distinct of any of these activity groups. Their means were between the extremes defined by the other activity groups on eight of the nine controversial actions. Typically, they sided with the values inherent to the backcountry user group. The nature observers favored an expansion of the hiking trail system connecting the King Crest to the beach areas significantly more than the ocean fishermen.

Discussion

Based on King Range users' preferences for recreation experiences, management actions, and ROS characteristics, several general conclusions are evident.

First, the range of means on the recreation experience preference scales indicates a definite pattern in the experience preferences of King Range users. There are distinctive REP's preferred most and least by users engaging in recreation in the King Range. Several REP scales focusing on the natural environment, exercise, and escape-related experiences are highly valued by King Range recreationists. Conversely, dimensions measuring user

preferences relating to the degree of social activity (Meeting New People, Observing Other People, Social Recognition) and presence of risk (Risk Taking, Risk Moderation) in the King Range are perceived by King Range users to add little to their satisfaction. Management actions can influence the mix of recreation experience opportunities provided. This can be done by managing the social and biophysical characteristics of particular sub-areas, and even sites, within the King Range, to increase the probability that the most highly desired types of experiences can be realized. In this way, the area managers can focus on providing quality recreation opportunities which are at least in part defined by those most highly valued experiences, by preserving scenic beauty, naturalness (with few man-made intrusions), and lack of congestion in the area.

Second, while the recreation experience preferences valued by King Range users are not unique to that area, several REP's do show distinct patterns for King Range users. Compared to a recent study on public land of recreationists in a river environment (Arkansas River in Colorado),[28] King Range users preferred a recreation environment exhibiting fewer opportunities for social interaction. Lower scores by King Range users on Meeting New People, Observing Other People, Being with Friends, and Social Recognition reflect preferences of those recreationists for escaping other people. One possible explanation for these differences is the difference between recreation environments. Most of the Arkansas River area where the interviewing occurred could be classified as a roaded natural or rural environment, whereas the King Range is primarily primitive and semi-primitive. Users engaging in recreation in an environment with primitive and semi-primitive opportunities expect to encounter fewer people than recreationists

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[28]See Arnold et al., 1981.

in a more developed environment. The subsequent recreation experiences preferred by users in these two environments would also be different.

Third, different patterns in the preferred recreation experience preferences of King Range users engaging in different recreation activities are evident from the data analyses. While the Student-Newman-Keuls test isolated differences on only one-quarter of the REP scales, patterns in the differences were apparent. The largest and most consistent differences occurred between activity groups whose preferred recreation environments are different. For example, backcountry users and roadside users (visitors engaging in car camping, sightseeing or picnicking) could be expected to have large REP differences, since backpackers normally prefer a more remote environment than roadside users. Some of the more interesting activity group differences occurred in REP dimensions focusing on social interaction and nature experiences. In the degree of social interaction desired, a fairly consistent trend separated the backcountry users from the roadside users and ocean fishermen. The backcountry users derived more satisfaction from Privacy and Tranquility than either the roadside users or ocean fishermen, who in turn valued Meeting New People and Observing Other People more than the backcountry group. Ocean fishermen differed from all other activity groups by placing less importance on the contribution that Scenery and General Nature Experience provide to perceived satisfaction.

Fourth, relative to the full spectrum of opportunities defined by the ROS classes, recreation opportunities provided in the King Range are nearer to the primitive end than to the developed end of the spectrum. This conclusion is supported by respondents' preferred ROS environments and by their perceptions of the ROS characteristics of the area.

Primitive and semi-primitive environments were preferred the most by respondents rating the degree of "favorability" of five recreation settings relative to participation in their selected activity in the King Range. No significant differences between means were found when respondents rating preferred settings were categorized by their "most important" activity. Therefore, King Range users prefer to recreate in environments toward the primitive end of the spectrum.

Results from the ROS question about users' perceptions of the characteristics of the environment where they actually engaged in their most important activity also suggest that the King Range provides a limited range of recreation opportunities. On a seven-point continuum between primitive (1.0) and developed (7.0), the King Range environment was consistently rated as slightly toward the primitive end of the spectrum (2.5 - 3.5) on all five ROS characteristic scales. In addition, only two of the five scales, remoteness and amount of development, had any significant differences between the perceptions of users grouped by either area of participation or by most important activity.

In combination, the results of the two ROS questions suggest that most King Range users prefer to recreate in a primitive to semi-primitive setting and that they perceive the King Range environment as offering that type of recreation opportunity. The high levels of satisfaction derived by King Range users from Scenery and Escaping Crowds further support this conclusion.

Users' preferred ROS environments and subjective appraisals of specific ROS characteristics account for little of the variation between activity groups. Yet, the differences on the remoteness and amount of development scales, mentioned above, underlie the potential controversy between activity groups in their preferences for possible management actions. When given

the opportunity to help direct the future development of the King Range, users from different subgroups prefer different scenarios. These conflicting preferences for management actions are discussed in the following two conclusions.

Fifth, the results show that most of the disagreement between identifiable subgroups of recreationists in the King Range exists in their attitudes toward development of the King Range.

While users recreating in different zones varied little in their ratings of ROS characteristics, they did disagree in their management action preferences. Additionally, most important activity and respondent familiarity with the King Range help explain some of the variation in the responses to the management actions. Student-Newman-Keuls tests for mean differences between subgroups of users based on these two variables isolated differences on more than one-half of the management actions. Overall, users most familiar with the King Range, recreating in the northern part of the area, or engaging in backcountry activities (hiking and remote camping) were strongly opposed to management actions improving access and road conditions in the King Range and development of facilities around the area. Conversely, the roadside users, first-time King Range recreationists, and visitors in the Shelter Cove area preferred improved facilities, including camper trailer facilities, a visitor center, and upgraded road quality.

Sixth, although recreation users of the King Range generally favored many of the "possible" management actions, there are considerable data inferring that management actions should be carefully considered before implementation.

Examination of most of the data describing overall user preferences for the management actions showed a large variability in the responses to the individual management actions. Large standard deviations and the distributions of responses across categories verifed that user preferences were polarized near both scale end-points on many issues. Two of the management items concerning motor vehicle use identified two groups of recreationists with opposite opinions. While 30 to 40 percent of the respondents "very strongly opposed" either continued vehicle use between Telegraph and Gitchell Creeks or permitting motor vehicle use on the beach between Punta Gorda and the Mattole River, another group of about 20 percent, "very strongly favored" these possible management actions.

In a similar case, almost one-fifth of the sample "very strongly favored" improved camper trailer facilities, while 36 percent of the recreationists were "very strongly opposed" to this possibility. Implementation of these and other management actions with similar variability could meet stiff opposition from the members of the polarized group. Some of this opposition could be lessened through careful identification of the characteristics and preferences of different groups reacting to issues. This report contains considerable information about group preferences (specifically activities), and special analyses could be conducted to augment these data if necessary.

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APPENDIX A

KING RANGE NATIONAL CONSERVATION AREA
QUESTIONNAIRES

(Summer, 1979)

FIGURE A-1
(EXIT INTERVIEW Form)

Approved
OMB No. 040-R3857
Expires June 30, 1980

VISITOR REGISTRATION

To visit (area) _____ Location of exit _____ _____

Date _____ (Time) _____ Location of entrance _____

Starting Date _____ (Time) _____ Primary method of travel _____

Number of people in group _____ (Vehicle) _____

The primary trip purpose _____ _____

How many times visited the area in the past year

___ 1) First time ___ 3) Twice ___ 5) Four times

___ 2) Once before ___ 4) Three times ___ 6) Five or more times

Using a map of the area, list all zones traversed in sequence of travel.

Travel Zones	1	2	3	4	5	6	7	8	9	10	11	12	13
# of nights in each	___	___	___	___	___	___	___	___	___	___	___	___	___
Travel Zones	14	15	16	17	18	19	20	21	22	23	24	25	26
# of nights in each	___	___	___	___	___	___	___	___	___	___	___	___	___

N. _____

ADDRESS _____

CITY, STATE _____ ZIP _____

Completion of this form is voluntary and is not required by law or to obtain a federal benefit.

Figure A-2
(MAIL QUESTIONNAIRE-Buff)

This questionnaire has been designed to learn more about the recreation related preferences of the users of the King Range National Conservation Area (NCA).

I. In total, how many visits have you made to the King Range NCA?

One visit	2-3 visits	4-6 visits	7-15 visits	16-30 visits	Over 30 visits	I:1

II. Below are issues of special concern to the managers of the King Range NCA. Please circle the number which best describes how much you favor (+) or oppose (-) each of the "Possible Management Actions" listed for that area. Circle only one number for each possible, but not necessarily planned, action. Use the attached map for identification of specific areas if necessary.

Possible Management Actions	FAVOR: Very Strongly	Strongly	Moderately	A Little	Neutral or Not Applicable	OPPOSE: A Little	Moderately	Strongly	Very Strongly	
1) Maintain existing closure of beach areas to motor vehicle use between Gitchell Creek and the mouth of the Mattole River	+4	+3	+2	+1	0	-1	-2	-3	-4	II:2
2) Maintain existing closure of beach areas to motor vehicle use near archaeological sites	+4	+3	+2	+1	0	-1	-2	-3	-4	
3) Permit motor vehicle use on beach areas between Punta Gorda and the mouth of the Mattole River	+4	+3	+2	+1	0	-1	-2	-3	-4	
4) Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek	+4	+3	+2	+1	0	-1	-2	-3	-4	II:5
5) Expand the present hiking trails to connect the King Crest Trail system to beach areas	+4	+3	+2	+1	0	-1	-2	-3	-4	
6) Designate some areas in the King Range NCA as part of the National Wilderness Preservation System	+4	+3	+2	+1	0	-1	-2	-3	-4	
7) Provide primitive camping facilities (i.e., drinking water, toilets, and trash receptacles) at the following areas:										
- Mouth of the Mattole River	+4	+3	+2	+1	0	-1	-2	-3	-4	
- Black Sands Beach near Telegraph Creek	+4	+3	+2	+1	0	-1	-2	-3	-4	
- Trailhead of the King Crest Trail	+4	+3	+2	+1	0	-1	-2	-3	-4	II:10
8) This question contains items describing possible visitor services in the King Range NCA. Do you favor or oppose:										
- a visitor center	+4	+3	+2	+1	0	-1	-2	-3	-4	
- more ranger personnel	+4	+3	+2	+1	0	-1	-2	-3	-4	
- interpretive information describing natural history, cultural and archaeological sites	+4	+3	+2	+1	0	-1	-2	-3	-4	
- more maps and brochures	+4	+3	+2	+1	0	-1	-2	-3	-4	
- more locational and directional signs	+4	+3	+2	+1	0	-1	-2	-3	-4	II:15
- improved camper trailer facilities	+4	+3	+2	+1	0	-1	-2	-3	-4	
9) Given that higher standard roads generally lead to an increase in visitor use at recreation areas, do you favor or oppose:										
- upgrading the access roads to the King Range NCA	+4	+3	+2	+1	0	-1	-2	-3	-4	
- improving the road quality within the King Range NCA	+4	+3	+2	+1	0	-1	-2	-3	-4	II:18

III. If you favored wilderness preservation for some parts of the King Range NCA (number 6 above), would you please identify areas you feel would be appropriate for designation.

_____ III:19-20

_____

_____

IV. Please check all the activities you participated in when visiting the King Range NCA this past summer.

1. ___ Camping near auto	7. ___ Hiking/walking	13. ___ Photography	IV:24-39
2. ___ Camping away from auto	8. ___ Collecting	14. ___ Wildlife viewing	
3. ___ Picnicking	9. ___ Ocean fishing	15. ___ Swimming	
4. ___ Sightseeing/auto driving	10. ___ Fresh water fishing	16. ___ Surfing	
5. ___ 4-wheel driving	11. ___ Hunting	17. Other (please list) _____	IV:40
6. ___ Motorcycling	12. ___ Nature study	_____	IV:41

V. To many people wilderness means different things. Could you please give us your definition of a wilderness area.

_____ V:42-43

_____

_____

VI. Using the activity you checked in Question IV, select one activity you enjoyed the most or spent the most time doing during your visits to the King Range NCA. Please list the activity in the blank:

Your Activity: _____ 1:66-67

A recreation experience is affected by many factors, some are satisfying and some are not. Imagine that you were to visit the same area next year (summer 1980) to participate in the activity you listed above. Then rate how much each of the following types of experiences would either add to (+) or detract from (-) the level of satisfaction you would probably realize from that visit. Please circle only one number for each item.

Experiences	EFFECT ON SATISFACTION: ADDS TO — Most Strongly	Strongly	Moderately	Slightly	Neutral	DETRACTS FROM — Slightly	Moderately	Strongly	Most Strongly	
1. Taking it easy physically	+4	+3	+2	+1	0	-1	-2	-3	-4	
2. Being in a natural setting	+4	+3	+2	+1	0	-1	-2	-3	-4	
3. Gaining a sense of self-confidence	+4	+3	+2	+1	0	-1	-2	-3	-4	1:68
4. Doing something with your family	+4	+3	+2	+1	0	-1	-2	-3	-4	
5. Experiencing peace and calm	+4	+3	+2	+1	0	-1	-2	-3	-4	1:80
6. Viewing the scenery	+4	+3	+2	+1	0	-1	-2	-3	-4	
7. Getting away from the usual demands of life	+4	+3	+2	+1	0	-1	-2	-3	-4	
8. Being near considerate people	+4	+3	+2	+1	0	-1	-2	-3	-4	
9. Developing your knowledge of things there	+4	+3	+2	+1	0	-1	-2	-3	-4	
10. Having a change from your daily routine	+4	+3	+2	+1	0	-1	-2	-3	-4	1:88
11. Being close to nature	+4	+3	+2	+1	0	-1	-2	-3	-4	
12. Using your equipment	+4	+3	+2	+1	0	-1	-2	-3	-4	
13. Developing personal spiritual values	+4	+3	+2	+1	0	-1	-2	-3	-4	
14. Being with others who enjoy the same thing you do	+4	+3	+2	+1	0	-1	-2	-3	-4	
15. Feeling isolated	+4	+3	+2	+1	0	-1	-2	-3	-4	1:90
16. Feeling your independence	+4	+3	+2	+1	0	-1	-2	-3	-4	
17. Thinking about good times you've had in the past	+4	+3	+2	+1	0	-1	-2	-3	-4	
18. Becoming better at it	+4	+3	+2	+1	0	-1	-2	-3	-4	
19. Being near others who could help you if you need them	+4	+3	+2	+1	0	-1	-2	-3	-4	
20. Experiencing open space	+4	+3	+2	+1	0	-1	-2	-3	-4	1:95
21. Being with other members of your group	+4	+3	+2	+1	0	-1	-2	-3	-4	
22. Being your own boss	+4	+3	+2	+1	0	-1	-2	-3	-4	
23. Being away from crowds of people	+4	+3	+2	+1	0	-1	-2	-3	-4	
24. Getting exercise	+4	+3	+2	+1	0	-1	-2	-3	-4	
25. Experiencing new and different things	+4	+3	+2	+1	0	-1	-2	-3	-4	1:70
26. Relaxing physically	+4	+3	+2	+1	0	-1	-2	-3	-4	2:1
27. Thinking about your personal values	+4	+3	+2	+1	0	-1	-2	-3	-4	
28. Testing your abilities	+4	+3	+2	+1	0	-1	-2	-3	-4	
29. Experiencing tranquility	+4	+3	+2	+1	0	-1	-2	-3	-4	
30. Viewing the scenic beauty	+4	+3	+2	+1	0	-1	-2	-3	-4	2:5
31. Leading other people	+4	+3	+2	+1	0	-1	-2	-3	-4	
32. Bringing your family closer together	+4	+3	+2	+1	0	-1	-2	-3	-4	
33. Learning about the topography of the land	+4	+3	+2	+1	0	-1	-2	-3	-4	
34. Avoiding the unexpected	+4	+3	+2	+1	0	-1	-2	-3	-4	
35. Discovering something new	+4	+3	+2	+1	0	-1	-2	-3	-4	2:10
36. Showing others you can do it	+4	+3	+2	+1	0	-1	-2	-3	-4	
37. Being with friends	+4	+3	+2	+1	0	-1	-2	-3	-4	
38. Being on your own	+4	+3	+2	+1	0	-1	-2	-3	-4	
39. Chancing dangerous situations	+4	+3	+2	+1	0	-1	-2	-3	-4	
40. Experiencing excitement	+4	+3	+2	+1	0	-1	-2	-3	-4	2:15
41. Enjoying the sounds and smells of nature	+4	+3	+2	+1	0	-1	-2	-3	-4	
42. Releasing or reducing some built-up tensions	+4	+3	+2	+1	0	-1	-2	-3	-4	
43. Observing other people in the area	+4	+3	+2	+1	0	-1	-2	-3	-4	
44. Developing your skills and abilities	+4	+3	+2	+1	0	-1	-2	-3	-4	
45. Being alone	+4	+3	+2	+1	0	-1	-2	-3	-4	2:20
46. Thinking about who you are	+4	+3	+2	+1	0	-1	-2	-3	-4	
47. Being in control of things that happen	+4	+3	+2	+1	0	-1	-2	-3	-4	
48. Being away from noise back home	+4	+3	+2	+1	0	-1	-2	-3	-4	
49. Meeting other people in the area	+4	+3	+2	+1	0	-1	-2	-3	-4	
50. Keeping physically fit	+4	+3	+2	+1	0	-1	-2	-3	-4	2:25
51. Learning more about nature	+4	+3	+2	+1	0	-1	-2	-3	-4	
52. Giving your mind a rest	+4	+3	+2	+1	0	-1	-2	-3	-4	
53. Sharing what you have learned with others	+4	+3	+2	+1	0	-1	-2	-3	-4	
54. Experiencing solitude	+4	+3	+2	+1	0	-1	-2	-3	-4	
55. Experiencing feelings of exhilaration	+4	+3	+2	+1	0	-1	-2	-3	-4	2:30
56. Having more agreeable temperatures	+4	+3	+2	+1	0	-1	-2	-3	-4	
57. Being creative	+4	+3	+2	+1	0	-1	-2	-3	-4	2:32

VII. In this question we want you to rate selected characteristics of the area where you recreated in the King Range NCA. Referring to your activity from Question VI, try to remember the specific area where you recreated in that activity the most. Then using the map on page 4 place a small X over a point which you feel is representative of that area (e.g. destination point for trail users). If you are unable to identify an area on the map please proceed to Question VIII. 3:1-2

Now, check the spaces below which best describe the characteristics of the area you identified on the map. The seven spaces provided define a range between the labeled end-points. Check one position on each scale which best describes the area.

Large	____	____	____	____	____	____	____	Small
Had many facilities for visitor use	____	____	____	____	____	____	____	Had no facilities for visitor use
Offered many opportunities for outdoor challenges	____	____	____	____	____	____	____	Offered no opportunities for outdoor challenges
Signs and sounds of man were practically non-existent	____	____	____	____	____	____	____	Signs and sounds of man were quite evident
Had many other users	____	____	____	____	____	____	____	Had no other users
Offered many opportunities to use outdoor skills	____	____	____	____	____	____	____	Offered no opportunities to use outdoor skills
Provided good opportunities to realize a sense of remoteness or isolation from civilization	____	____	____	____	____	____	____	Provided no opportunities to realize a sense of remoteness or isolation from civilization
Demanded little physical effort to reach your destination	____	____	____	____	____	____	____	Demanded much physical effort to reach your destination
Management actions and controls were very apparent	____	____	____	____	____	____	____	Management actions and controls were not apparent
No motorized vehicles were present	____	____	____	____	____	____	____	Many motorized vehicles were present
Provided no opportunities to get far away from roads with motorized vehicles	____	____	____	____	____	____	____	Provided good opportunities to get far away from roads with motorized vehicles

VIII. The Clean Air Act Amendments of 1977 require that investigations be conducted to determine if the quality of outdoor recreation experiences is affected by reductions in visibility. Would you please list the ways you feel reductions in visibility might affect your recreation experience in the King Range NCA, even if you experienced no reductions in visibility.

_____ 2:33-37

_____

_____

IX. We know that users with different characteristics have different preferences. For that reason, we would appreciate your answering the following, more personal questions.

1. Your sex? ____Male ____Female 3:38

2. What is your present age? _____ 3:39-40

3. What is the highest year of formal schooling you have completed? (Please circle one.)

Elementary	1	2	3	4	5	6	7	8
High school or vocational school	9	10	11	12				
College or technical school	13	14	15	16				
Post graduate school	17	18	19	20	21	22		

3:41-42

4. Population of the community where you live:

____500,000 or more ____25,000-100,000 ____Below 5,000

____100,000-500,000 ____5,000-25,000 ____Rural 3:43

5. What is the zip code of your permanent address? ___ ___ ___ ___ ___ 3:44-48

THANK YOU FOR YOUR HELP!

J. Ross Arnold
Recreation Resources
Colorado State University
Fort Collins, Colorado 80523

CSU Project #31-1480-

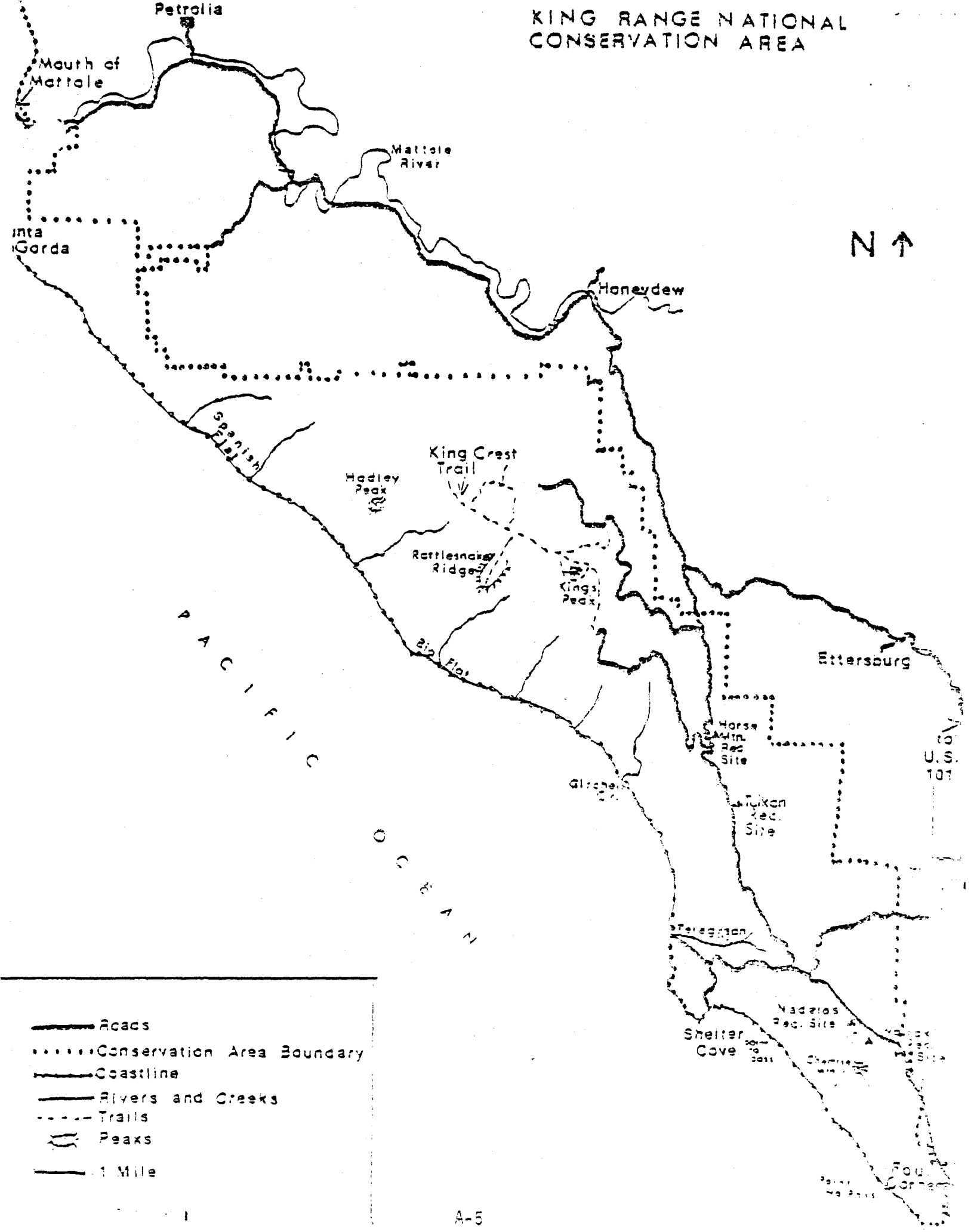
KING RANGE NATIONAL CONSERVATION AREA
Petrolia
Mouth of Mattole
Mattole River
Honeydew
N
Spanish Flat
King Crest Trail
Hadley Peak
Rattlesnake Ridge
Kings Peak
Big Flat
Ettersburg
U.S. 101
Telegraph
Shelter Cove
PACIFIC OCEAN
Roads
Conservation Area Boundary
Coastline
Rivers and Creeks
Trails
Peaks
1 Mile

Figure A-3
(MAIL QUESTIONNAIRE-Blue)

This questionnaire has been designed to learn more about the recreation related preferences of the users of the King Range National Conservation Area (NCA).

I. In total, how many visits have you made to the King Range NCA?

One visit	2-3 visits	4-6 visits	7-15 visits	16-30 visits	Over 30 visits

II. Below are issues of special concern to the managers of the King Range NCA. Please circle the number which best describes how much you favor (+) or oppose (-) each of the "Possible Management Actions" listed for that area. Circle only one number for each possible, but not necessarily planned, action. Use the attached map for identification of specific areas if necessary.

Possible Management Actions	FAVOR: Very Strongly	Strongly	Moderately	A Little	Neutral or Not Applicable	OPPOSE: A Little	Moderately	Strongly	Very Strongly
1) Maintain existing closure of beach areas to motor vehicle use between Gitchell Creek and the mouth of the Mattole River	+4	+3	+2	+1	0	-1	-2	-3	-4
2) Maintain existing closure of beach areas to motor vehicle use near archaeological sites	+4	+3	+2	+1	0	-1	-2	-3	-4
3) Permit motor vehicle use on beach areas between Punta Gorda and the mouth of the Mattole River	+4	+3	+2	+1	0	-1	-2	-3	-4
4) Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek	+4	+3	+2	+1	0	-1	-2	-3	-4
5) Expand the present hiking trails to connect the King Crest Trail system to beach areas	+4	+3	+2	+1	0	-1	-2	-3	-4
6) Designate some areas in the King Range NCA as part of the National Wilderness Preservation System	+4	+3	+2	+1	0	-1	-2	-3	-4
7) Provide primitive camping facilities (i.e., drinking water, toilets, and trash receptacles) at the following areas:									
- Mouth of the Mattole River	+4	+3	+2	+1	0	-1	-2	-3	-4
- Black Sands Beach near Telegraph Creek	+4	+3	+2	+1	0	-1	-2	-3	-4
- Trailhead of the King Crest Trail	+4	+3	+2	+1	0	-1	-2	-3	-4
8) This question contains items describing possible visitor services in the King Range NCA. Do you favor or oppose:									
- a visitor center	+4	+3	+2	+1	0	-1	-2	-3	-4
- more ranger personnel	+4	+3	+2	+1	0	-1	-2	-3	-4
- interpretive information describing natural history, cultural and archaeological sites	+4	+3	+2	+1	0	-1	-2	-3	-4
- more maps and brochures	+4	+3	+2	+1	0	-1	-2	-3	-4
- more locational and directional signs	+4	+3	+2	+1	0	-1	-2	-3	-4
- improved camper trailer facilities	+4	+3	+2	+1	0	-1	-2	-3	-4
9) Given that higher standard roads generally lead to an increase in visitor use at recreation areas, do you favor or oppose:									
- upgrading the access roads to the King Range NCA	+4	+3	+2	+1	0	-1	-2	-3	-4
- improving the road quality within the King Range NCA	+4	+3	+2	+1	0	-1	-2	-3	-4

III. If you favored wilderness preservation for some parts of the King Range NCA (Number 6 above), would you please identify areas you feel would be appropriate for designation.

_____

_____

_____

IV. Please check all the activities you participated in when visiting the King Range NCA this past summer.

1. ___ Camping near auto	7. ___ Hiking/walking	13. ___ Photography
2. ___ Camping away from auto	8. ___ Collecting	14. ___ Wildlife viewing
3. ___ Picnicking	9. ___ Ocean fishing	15. ___ Swimming
4. ___ Sightseeing/auto driving	10. ___ Fresh water fishing	16. ___ Surfing
5. ___ 4-wheel driving	11. ___ Hunting	17. Other (please list) _____
6. ___ Motorcycling	12. ___ Nature study	_____

V. To many people wilderness means different things. Could you please give us your definition of a wilderness area.

_____

_____

_____

VI. Using the activities you checked in Question IV, select one activity you enjoyed the most or spent the most time doing during your visits to the King Range NCA. Please list the activity in the blank.

Your Activity: _____ 1:48-47

People engage in outdoor recreation for a variety of reasons. Imagine that you were to visit the same area next year (summer 1980) to participate in the activity you listed above. Then rate how important each item listed below would be to you as a reason for participating in that activity. Check one box for each reason.

Reasons	IMPORTANCE: Not Important	Of Little Importance	Somewhat Important	Moderately Important	Very Important	Extremely Important	
1. Taking it easy physically							
2. Being in a natural setting							
3. Gaining a sense of self-confidence							1:49
4. Doing something with your family							
5. Experiencing peace and calm							1:51
6. Viewing the scenery							
7. Getting away from the usual demands of life							
8. Being near considerate people							
9. Developing your knowledge of things there							
10. Having a change from your daily routine							1:56
11. Being close to nature							
12. Using your equipment							
13. Developing personal spiritual values							
14. Being with others who enjoy the same thing you do							
15. Feeling isolated							1:60
16. Feeling your independence							
17. Thinking about good times you've had in the past							
18. Becoming better at it							
19. Being near others who could help you if you need them							
20. Experiencing open space							1:65
21. Being with other members of your group							
22. Being your own boss							
23. Being away from crowds of people							
24. Getting exercise							
25. Experiencing new and different things							1:70
26. Relaxing physically							2:1
27. Thinking about your personal values							
28. Testing your abilities							
29. Experiencing tranquility							
30. Viewing the scenic beauty							2:6
31. Leading other people							
32. Bringing your family closer together							
33. Learning about the topography of the land							
34. Avoiding the unexpected							
35. Discovering something new							2:11
36. Showing others you can do it							
37. Being with friends							
38. Being on your own							
39. Enjoying dangerous situations							
40. Experiencing excitement							2:16
41. Enjoying the sounds and smells of nature							
42. Releasing or reducing some built-up tensions							
43. Observing other people in the area							
44. Developing your skills and abilities							
45. Being alone							2:21
46. Thinking about who you are							
47. Being in control of things that happen							
48. Being away from noise back home							
49. Meeting other people in the area							
50. Keeping physically fit							2:26
51. Learning more about nature							
52. Giving your mind a rest							
53. Sharing what you have learned with others							
54. Experiencing solitude							
55. Experiencing feelings of exhilaration							2:31
56. Having more agreeable temperatures							
57. Being creative							2:33

VII. a. A wide variety of recreation settings or environments can be provided by resource managers. Below are five lists of items which describe five settings in which you might engage in recreation activities. For the activity you listed in Question VI. of this questionnaire, indicate whether you would like, dislike, or don't care about the condition described by each item in each list. 3:1-2

Setting Descriptions	Evaluation of Each Setting Factor For Your Activity			
	Like	Dislike	Unimportant	
Setting 1				
Remote, usually greater than 3 miles from roads.	☐	☐	☐	3:3
Unmodified natural environment over 5,000 acres.	☐	☐	☐	
Very little concentration or evidence of other users.	☐	☐	☐	3:6
Very low user density providing very few contacts with other users.	☐	☐	☐	
Managed without on-site regulation of users.	☐	☐	☐	
Free of most facilities.	☐	☐	☐	
Free of any resource uses which significantly disturb the natural environment.	☐	☐	☐	
Free of motorized use.	☐	☐	☐	3:10
Setting 2				
Moderately remote, usually greater than 1/2 mile from roads.	☐	☐	☐	
Predominately unmodified natural environment of over 2,500 acres.	☐	☐	☐	
Little, but some concentration or evidence of other users.	☐	☐	☐	
Low user density providing few, but some, contacts with other users.	☐	☐	☐	
Managed with minimum on-site regulation of users.	☐	☐	☐	3:15
A few facilities are provided for resource protection and safety of users.	☐	☐	☐	
Free of most resource uses which significantly disturb the natural environment.	☐	☐	☐	
Free of motorized use.	☐	☐	☐	
Setting 3				
Moderately remote, usually greater than 1/2 mile from roads.	☐	☐	☐	
Predominately unmodified natural environment of over 2,500 acres.	☐	☐	☐	3:20
Little, but some concentration or evidence of other users.	☐	☐	☐	
Low user density providing few, but some, contacts with other users.	☐	☐	☐	
Managed with minimum on-site regulation of users.	☐	☐	☐	
A few facilities are provided for resource protection and safety of users.	☐	☐	☐	
Free of most resource uses which significantly disturb the natural environment.	☐	☐	☐	3:25
Motorized use is allowed but generally restricted to 4-wheel drive vehicles and off-road motorcycles.	☐	☐	☐	
Setting 4				
Some of area remote, some along roads.	☐	☐	☐	
Environment appears to be generally natural.	☐	☐	☐	
Moderate concentration of users occurs and there are noticeable evidences of other users.	☐	☐	☐	
Contacts with other users are expected, but not constant.	☐	☐	☐	3:30
Managed with on-site regulation of users.	☐	☐	☐	
Rustic facilities available for resource protection and convenience and safety of users.	☐	☐	☐	
Resource uses like timbering and grazing might be evident.	☐	☐	☐	
Automobile use is allowed and common.	☐	☐	☐	
Setting 5				
Area is along roads.	☐	☐	☐	3:35
Environment is substantially modified from natural with some urban type developments.	☐	☐	☐	
Concentration of users is high and there are noticeable evidences of other users.	☐	☐	☐	
Contacts with other users are frequent.	☐	☐	☐	
Managed with on-site regulations of users.	☐	☐	☐	
Modern, high standard, and generally large facilities are provided for users.	☐	☐	☐	3:40
Resource uses allowed include timbering, grazing, water development and tourist and shooting areas.	☐	☐	☐	
Automobile use is allowed and common.	☐	☐	☐	3:42

b. Now please rate how favorable or unfavorable each of the 5 total recreation settings is for your activity in the King Range NCA. Give us your overall evaluation of each of the 5 settings.

Setting	Very Favorable	Moderately Favorable	Slightly Favorable	Neither Favorable or Unfavorable	Slightly Unfavorable	Moderately Unfavorable	Very Unfavorable	
1	/__/	/__/	/__/	/__/	/__/	/__/	/__/	3:43
2	/__/	/__/	/__/	/__/	/__/	/__/	/__/	
3	/__/	/__/	/__/	/__/	/__/	/__/	/__/	
4	/__/	/__/	/__/	/__/	/__/	/__/	/__/	
5	/__/	/__/	/__/	/__/	/__/	/__/	/__/	3:47

VIII. The Clean Air Act Amendments of 1977 require that investigations be conducted to determine if the quality of outdoor recreation experiences is affected by reductions in visibility. Would you please list the ways you feel reductions in visibility might affect your recreation experience in the King Range NCA, even if you experienced no reductions in visibility.

_____ 2:33-37

_____

_____

IX. We know that users with different characteristics have different preferences. For that reason, we would appreciate your answering the following, more personal questions.

1. Your sex? ___ Male ___ Female 2:38

2. What is your present age? _____ 2:39-40

3. What is the highest year of formal schooling you have completed? (Please circle one.)

Elementary	1	2	3	4	5	6	7	8
High school or vocational school	9	10	11	12				
College or technical school	13	14	15	16				
Post graduate school	17	18	19	20	21	22		

2:41-42

4. Population of the community where you live:

____ 500,000 or more	____ 25,000-100,000	____ Below 5,000
____ 100,000-500,000	____ 5,000-25,000	____ Rural

2:43

5. What is the zip code of your permanent address? ____ ____ ____ ____ ____ 2:44-48

THANK YOU FOR YOUR HELP!

J. Ross Arnold
Recreation Resources
Colorado State University
Fort Collins, Colorado 80523

CSU Project #31-1480-

Table A-1. Recreation experience preference domains, scales (designated by numbers), and items (designated by lower case letters) used in the King Range NCA (Summer, 1979).

Domain A: Achievement

1. Reinforcing Self-Image
   a. Gaining a sense of self-confidence.
2. Social Recognition
   a. Showing others you can do it.
3. Skill Development
   a. Becoming better at it.
   b. Developing your skills and abilities.
4. Competence Testing
   a. Testing your abilities.
5. Seeking Stimulation
   a. Experiencing excitement.
   b. Experiencing feelings of exhilaration.

Domain B: Leadership/Autonomy

1. Independence
   a. Feeling your independence.
   b. Being on your own.
2. Autonomy
   a. Being your own boss.
3. Control Power
   a. Being in control of things that happen.
4. Teaching-Sharing Skills
   a. Sharing what you have learned with others.
5. Leading Others
   a. Leading other people.

Domain C: Risk Taking

1. Risk Taking
   a. Chancing dangerous situations.
2. Risk Moderation
   a. Being near others who could help you if you need them.

3. Risk Avoidance
    a. Avoiding the unexpected.

Domain D: Equipment
1. Equipment
    a. Using your equipment.

Domain E: Family Togetherness
1. Family Togetherness
    a. Doing something with your family.
    b. Bringing your family closer together.

Domain F: Being with People
1. Being with Friends
    a. Being with other members of your group.
    b. Being with friends.
2. Being with Similar People
    a. Being with others who enjoy the same thing you do.

Domain G: Meeting-Observing New People
1. Meeting New People
    a. Meeting other people in the area.
2. Observing Other People
    a. Observing other people in the area.

Domain H: General Learning
1. General Learning
    a. Developing your knowledge of things there.
2. Exploration
    a. Experiencing new and different things.
    b. Discovering something new.
3. Geography of Area
    a. Learning about the topography of the land.
4. Learn about Nature
    a. Learning more about nature.

Domain I. Relationships with Nature

1. Scenery
    a. Viewing the scenery.
    b. Viewing the scenic beauty.
2. General Nature Experience
    a. Being close to nature.
    b. Enjoying the sounds and smells of nature.

Domain J: Reflect on Personal Values

1. Spiritual
    a. Developing personal spiritual values.
2. Introspection
    a. Thinking about your personal values.
    b. Thinking about who you are.

Domain K: Creativity

1. Creativity
    a. Being creative.

Domain L: Nostalgia

1. Nostalgia
    a. Thinking about good times you've had in the past.

Domain M: Exercise/Physical Fitness

1. Exercise/Physical Fitness
    a. Getting exercise.
    b. Keeping physically fit.

Domain N: Physical Rest

1. Physical Rest
    a. Relaxing physically.

Domain O: Escape Personal-Social Pressure

1. Tension Release
    a. Releasing or reducing some built-up tensions.
2. Slow Down Mentally
    a. Giving your mind a rest.

3. Escape Role Overloads
    a. Getting away from the usual demands of life.
4. Escape Daily Routine
    a. Having a change from your daily routine.

Domain P: Escape Physical Pressure

1. Tranquility
    a. Experiencing tranquility.
    b. Experiencing solitude.
    c. Experiencing peace and calm.
2. Seek Open Space
    a. Experiencing open space
3. Privacy
    a. Feeling isolated.
    b. Being alone.
4. Escape Crowds
    a. Being away from crowds of people.
5. Escape Physical Stressors
    a. Being away from noise back home.

Domain Q: Security

1. Social Security
    a. Being near considerate people.

Domain R: Temperature

1. Temperature
    a. Having more agreeable temperatures.

APPENDIX B

RECREATION EXPERIENCE PREFERENCES

Table B-1. Recreation experience preference domain (D), scale (S), and item (I) means for those respondents sampled in the King Range NCA using the "adds to - detracts from satisfaction" response format (Summer, 1979).

Recreation Experience Preferences Domain Scale Item	Total Sample							Inter-Item Correlation[d]	
	Mean[a]			S.D.[b]	N	Alpha[c]		r	$\bar{r}$
	D	S	I						
1. Achievement	1.8			1.6	95				.41
Reinforcing Self-Image		2.1		1.6	91				
Gaining a sense of self-confidence.			2.1	1.6	91				
Social Recognition		0.3		1.6	92				
Showing others you can do it.			0.3	1.6	92				
Skill Development		1.9		1.5	93	.68		.51	
Becoming better at it.			2.0	1.5	91				
Developing your skills and abilities.			1.9	1.6	92				
Competence Testing		1.9		1.5	93				
Testing your abilities.			1.9	1.5	93				
Seeking Stimulation		2.3		1.7	94	.78		.62	
Experiencing excitement.			1.9	1.8	92				
Experiencing feelings of exhilaration.			2.5	1.5	92				
2. Leadership/Autonomy	1.5			1.6	95				.39
Independence		2.2		1.5	93	.76		.6	
Feeling your independence.			2.5	1.5	92				
Being on your own.			2.0	1.5	93				
Autonomy		1.6		1.6	92				
Being your own boss.			1.6	1.6	92				
Control Power		1.5		1.8	92				
Being in control of things that happen.			1.5	1.8	92				
Teaching-Sharing Skills		1.6		1.5	91				
Sharing what you have learned with others.			1.6	1.5	91				
Leading Others		0.4		1.6	91				
Leading other people.			0.4	1.6	91				
3. Risk Taking	0.6			2.0	94	.25			.04
Risk Taking		0.3		2.2	92				
Chancing dangerous situations.			0.3	2.2	92				
Risk Moderation		1.2		1.7	92				
Being near others who could help you if you need them.			1.2	1.7	92				
Risk Avoidance		0.3		2.0	92				
Avoiding the unexpected.			0.3	2.0	92				
4. Equipment	1.7			1.9	92				
Equipment		1.7		1.9	92				
Using your equipment.			1.7	1.9	92				
5. Family Togetherness	2.4			1.6	94			.59	
Family Togetherness		2.4		1.6	94	.74		.59	
Doing something with your family.			2.6	1.5	94				
Bringing your family closer together.			2.2	1.6	93				
6. Being with People	2.1			1.6	94	.77			.51
Being with Friends		1.9		1.6	93	.74		.58	
Being with other members of your group.			1.8	1.6	92				
Being with friends.			2.1	1.6	93				
Being with Similar People		2.3		1.7	94				
Being with others who enjoy the same thing you do.			2.3	1.7	94				
7. Meeting-Observing New People	0.2			2.3	93	.87		.75	
Meeting New People		-0.5		2.1	93				
Meeting other people in the area.			0.5	2.1	93				
Observing Other People		-0.3		2.4	91				
Observing other people in the area.			-0.3	2.4	91				
8. General Learning	2.7			1.3	97				.53
General Learning		2.7		1.3	93				
Developing your knowledge of things there.			2.7	1.3	93	.85			
Exploration		2.9		1.2	97	.73		.57	
Experiencing new and different things.			2.9	1.3	95				
Discovering something new.			2.9	1.2	96				
Geography of Area		2.3		1.4	92				
Learning about the topography of the land.			2.3	1.4	92				
Learn About Nature		2.8		1.2	95				
Learning more about nature.			2.8	1.2	95				
9. Relationships with Nature	3.4			1.0	99	.90			.69
Scenery		3.5		1.0	97	.91		.81	
Viewing the scenery.			3.5	0.9	96				
Viewing the scenic beauty.			3.4	1.1	94				
General Nature Experience		3.3		1.0	97	.79		.65	
Being close to nature.			3.3	1.0	96				
Enjoying the sounds and smells of nature.			3.3	1.0	96				

Table B-1. Continued.

Recreation Experience Preferences Domain Scale Item	Total Sample Mean[a] D	S	I	S.D.[b]	N	Alpha[c]	Inter-Item Correlation[d] r	$\bar{r}$
10. Reflect on Personal Values	1.8			1.6	94	.80		.55
Spiritual		2.0		1.7	92			
Developing personal spiritual values.			2.0	1.7	92			
Introspection		1.6		1.5	94	.84	.71	
Thinking about your personal values.			1.8	1.5	92			
Thinking about who you are.			1.4	1.5	94			
11. Creativity	1.8			1.6	94			
Creativity		1.8		1.6	94			
Being creative.			1.8	1.6	94			
12. Nostalgia	1.8			1.6	95			
Nostalgia		1.8		1.6	95			
Thinking about good times you've had in the past.			1.8	1.6	95			
13. Exercise/Physical Fitness	2.8			1.3	94	.78	.64	
Exercise/Physical Fitness		2.8		1.3	94	.78	.64	
Getting exercise.			2.9	1.2	94			
Keeping physically fit.			2.6	1.4	93			
14. Physical Rest	2.2			1.8	92			
Physical Rest		2.2		1.8	92			
Relaxing pnysically.			2.2	1.8	92			
15. Escape Personal-Social Pressure	2.8			1.4	94	.72		.40
Tension Release		2.3		1.4	91			
Releasing or reducing some built-up tensions.			2.3	1.4	91			
Slow Down Mentally		2.5		1.7	93			
Giving your mind a rest.			2.5	1.7	93			
Escape Role Overloads		3.3		1.1	93			
Getting away from the usual demands of life.			3.3	1.1	93			
Escape Daily Routine		2.9		1.3	93			
Having a change from your daily routine.			2.9	1.3	93			
16. Escape Physical Pressure	3.0			1.3	99	.89		.52
Tranquility		3.0		1.3	98	.77		.54
Experiencing tranquility.			2.9	1.3	94			
Experiencing solitude.			2.5	1.6	92			
Experiencing peace and calm.			3.4	1.1	96			
Seek Open Space		3.3		1.1	96			
Experiencing open space.			3.3	1.1	96			
Privacy		2.2		1.7	93	.68	.53	
Feeling isolated.			2.3	1.7	92			
Being alone.			2.1	1.7	93			
Escape Crowds		3.4		1.0	96			
Being away from crowds of people.			3.4	1.0	96			
Escape Physical Stressors		2.8		1.4	93			
Being away from noise back home.			2.8	1.4	93			
17. Security	2.1			1.9	94			
Social Security		2.1		1.9	94			
Being near considerate people.			2.1	1.9	94			
18. Temperature	1.3			1.6	94			
Temperature		1.3		1.6	94			
Having more agreeable temperatures.			1.3	1.6	94			

[a]Means are based on responses to a nine-point response format ranging from +4 (very strongly adds) to -4 (very strongly detracts).

[b]Standard deviations for multiple-item scales are computed by averaging the standard deviations of the items within that scale. Standard deviations for multiple scale domains are computed by averaging the standard deviations of the scales within that domain.

[c]Alpha reliability for scales and domains containing more than one item using the Cronbach alpha computation for internal consistency.

[d]For scales and domains consisting of only two items, "r," or the correlation between the two items, is reported here. The average inter-item correlation, "$\bar{r}$," is reported for scales and domains consisting of three of more items.

Table B-2. Recreation experience preference domain (D), scale (S), and item (I) means for those respondents sampled in the King Range NCA using the "importance rating" response format (Summer, 1979).

Recreation Experience Preferences Domain Scale Item	Total Sample Mean[a] D	S	I	S.D.[b]	N	Alpha[c]	Inter-Item Correlation[d] r	$\bar{r}$
1. Achievement	3.1			1.5	100	.81		.37
Reinforcing Self Image		3.4		1.8	94			
Gaining a sense of self-confidence.			3.4	1.8	94			
Social Recognition		1.7		1.0	97			
Showing others you can do it.			1.7	1.0	97			
Skill Development		3.3		1.5	98	.84	.71	
Becoming better at it.			3.3	1.6	97			
Developing your skills and abilities.			3.3	1.5	96			
Competence Testing		3.3		1.5	99			
Testing your abilities.			3.3	1.5	99			
Seeking Stimulation		3.7		1.6	99	.53	.37	
Experiencing excitement.			3.3	1.7	99			
Experiencing feelings of exhilaration.			4.0	1.4	98			
2. Leadership/Autonomy	3.1			1.4	100	.56		.16
Independence		3.8		1.6	100	.51	.36	
Feeling your own independence.			3.7	1.7	99			
Being on your own.			3.8	1.6	97			
Autonomy		3.2		1.7	99			
Being your own boss.			3.2	1.7	99			
Control Power		3.7		1.4	95			
Being in control of things that happen.			3.7	1.4	95			
Teaching-Sharing Skills		2.9		1.4	97			
Sharing what you have learned with others.			2.9	1.4	97			
Leading Others		1.7		0.8	97			
Leading other people.			1.7	0.8	97			
3. Risk Taking	2.4			1.5	99	.52		.23
Risk Taking		2.1		1.4	96			
Chancing dangerous situations.			2.1	1.4	96			
Risk Moderation		2.8		1.5	99			
Being near others who could help you if you need them.			2.8	1.5	99			
Risk Avoidance		2.4		1.5	96			
Avoiding the unexpected.			2.4	1.5	96			
4. Equipment	3.5			1.7	98			
Equipment		3.5		1.7	98			
Using your equipment.			3.5	1.7	98			
5. Family Togetherness	4.2				99	.83	.71	
Family Togetherness		4.2		1.6	99	.83	.71	
Doing something with your family.			4.4	1.5	98			
Bringing your family closer together.			3.9	1.6	96			
6. Being with People	3.6			1.5	100	.76		.53
Being with Friends		3.4		1.5	100	.79	.62	
Being with other members of your group.			3.0	1.6	100			
Being with friends.			3.7	1.4	98			
Being with Similar People		3.8		1.5	97			
Being with others who enjoy the same thing you do.			3.8	1.5	97			
7. Meeting-Observing New People	1.9			1.1	98	.52	.38	
Meeting New People		2.2		1.3	96			
Meeting other people in the area.			2.2	1.3	96			
Observing Other People		1.6		1.0	97			
Observing other people in the area.			1.6	1.0	97			
8. General Learning	4.2			1.3	99	.76		.39
General Learning		4.4		1.4	97			
Developing your knowledge of things there.			4.4	1.4	97			
Exploration		4.4		1.2	99	.75	.62	
Experiencing new and different things.			4.6	1.2	98			
Discovering something new.			4.3	1.3	98			
Geography of Area		3.6		1.3	97			
Learning about the topography of the land.			3.6	1.3	97			
Learn About Nature		4.5		1.3	94			
Learning more about nature.			4.5	1.3	94			
9. Relationships with Nature	5.2			0.9	100	.85		.59
Scenery		5.2		0.9	100	.76	.62	
Viewing the scenery.			5.3	0.8	100			
Viewing the scenic beauty.			5.1	1.0	98			
General Nature Experience		5.2		0.9	100	.53	.48	
Being close to nature.			5.4	0.8	99			
Enjoying the sounds and smells of nature.			5.1	1.1	98			

Table B-2. Continued.

Recreation Experience Preferences Domain Scale Item	Total Sample Mean[a] S	D	I	S.D.[b]	N	Alpha[c]	Inter-Item Correlation[d] r	$\bar{r}$
10. Reflect on Personal Values	3.6			1.7	99	.83		.60
Spiritual		3.9		1.7	98			
Developing personal spiritual values.			3.9	1.7	98			
Introspection		3.2		1.7	99	.90	.82	
Thinking about your personal values.			3.4	1.6	99			
Thinking about who you are.			3.0	1.7	97			
11. Creativity	3.2			1.6	97			
Creativity		3.2		1.6	97			
Being creative.			3.2	1.6	97			
12. Nostalgia	2.8			1.5	99			
Nostalgia		2.8		1.5	99			
Thinking about good times you've had in the past.			2.8	1.5	99			
13. Exercise/Physical Fitness	4.3			1.4	100	.74	.6	
Exercise/Physical Fitness		4.3		1.4	100			
Getting exercise.			4.5	1.4	100			
Keeping physically fit.			4.2	1.4	99			
14. Physical Rest	4.0			1.6	100			
Physical Rest		4.0		1.6	100			
Relaxing physically.			4.0	1.6	100			
15. Escape Personal-Social Pressure	4.8			1.3	100	.76		.45
Tension Release		4.3		1.5	96			
Releasing or reducing some built-up tensions.			4.3	1.5	96			
Slow Down Mentally		4.6		1.4	98			
Giving your mind a rest.			4.6	1.4	98			
Escape Role Overloads		5.2		1.1	100			
Getting away from the usual demands of life.			5.2	1.1	100			
Escape Daily Routine		5.1		1.0	99			
Having a change from your daily routine.			5.1	1.0	99			
16. Escape Physical Pressure	4.7			1.3	100	.87		.48
Tranquility		4.8		1.2	100	.71		.52
Experiencing tranquility.			4.8	1.2	98			
Experiencing solitude.			4.1	1.7	98			
Experiencing peace and calm.			5.4	0.7	98			
Seek Open Space		5.1		1.2	97			
Experiencing open space.			5.1	1.2	97			
Privacy		3.6		1.8	100	.78	.62	
Feeling isolated.			3.7	1.8	85			
Being alone.			3.5	1.7	98			
Escape Crowds		5.2		1.2	100			
Being away from crowds of people.			5.2	1.2	100			
Escape Physical Stressors		4.8		1.3	93			
Being away from noise back home.			4.8	1.3	93			
17. Security	4.0			1.7	98			
Social Security		4.0		1.7	98			
Being near considerate people.			4.0	1.7	98			
18. Temperature	2.8			1.5	93			
Temperature		2.8		1.5	93			
Having more agreeable temperatures.			2.8	1.5	93			

[a]Means are based on responses to a six-point response format ranging from 6 (extremely important) to 1 (not important).

[b]Standard deviations for multiple-item scales are computed by averaging the standard deviations of the items within that scale. Standard deviations for multiple-scale domains are computed by averaging the standard deviations of the scales within that domain.

[c]Alpha reliability for scales and domains consisting of more than one item using the Cronbach alpha computation for internal consistency.

[d]For scales and domains consisting of only two items, "r," or the correlation between the two items, is reported here. The average inter-item correlation, "$\bar{r}$," is reported for scales and domains consisting of three or more items.

Table B-3. Recreation experience preference domain (D), scale (S), and item (I) means for those respondents sampled in the King Range NCA using the "adds to - detracts from satisfaction" response format, grouped by their most important activity (Summer, 1979).

Recreation Experience Preferences Domain / Scale / Item	Roadside Users Mean[a] D	S	I	S.D.[b]	N	Backcountry Users Mean[a] D	S	I	S.D.[b]	N	Ocean Fishermen Mean[a] D	S	I	S.D.[b]	N	Nature Observers Mean[a] D	S	I	S.D.[b]	N
1. Achievement	1.2			1.6	11	1.8			1.3	32	1.5			1.7	17	1.4			1.6	14
Reinforcing Self-Image		2.1		1.6	11		2.0		1.4	30		1.5		1.6	15		1.6		1.7	14
Gaining a sense of self-confidence.			2.1	1.6	11			2.0	1.4	30			1.5	1.6	15			1.6	1.7	14
Social Recognition		-0.1		1.4	11		0.4		1.3	31		0.1		1.9	16		-0.1		1.9	14
Showing others you can do it.			-0.1	1.4	11			0.4	1.3	31			0.1	1.9	16			-0.1	1.9	14
Skill Development		1.2		1.5	11		1.9		1.4	31		1.9		1.3	16		1.6		1.6	14
Becoming better at it.			1.5	1.6	11			2.0	1.2	31			1.9	1.4	16			1.8	1.5	13
Developing your skills and abilities.			0.8	1.3	11			1.7	1.5	31			2.0	1.3	16			1.5	1.7	13
Competence Testing		1.2		1.4	11		2.0		1.2	31		1.6		1.8	17		1.8		1.6	14
Testing your abilities.			1.2	1.4	11			2.0	1.2	31			1.6	1.8	17			1.8	1.6	14
Seeking Stimulation		1.6		2.1	11		2.5		1.5	32		1.7		1.9	17		2.1		1.4	14
Experiencing excitement.			1.1	1.7	10			2.0	1.7	32			1.3	2.4	16			2.1	1.4	14
Experiencing feelings of exhilaration.			1.9	2.5	11			2.9	1.2	31			1.9	1.4	17			2.1	1.5	14
2. Leadership/Autonomy	1.7			1.6	12	1.4			1.5	31	1.2			1.7	17	1.2			1.4	14
Independence		1.8		1.7	12		2.3		1.4	31		1.8		1.5	16		2.6		1.3	14
Feeling your independence			2.0	1.5	11			2.5	1.5	31			2.3	1.5	16			2.9	1.4	14
Being on your own.			1.5	1.9	12			2.1	1.3	31			1.4	1.5	16			2.4	1.3	14
Autonomy		2.0		1.7	11		1.4		1.3	31		1.5		2.1	16		1.1		1.0	14
Being your own boss.			2.0	1.7	11			1.4	1.3	31			1.5	2.1	16			1.1	1.0	14
Control Power		1.7		1.9	10		1.4		1.6	31		1.4		1.6	17		1.0		2.0	14
Being in control of things that happen.			1.7	1.9	10			1.4	1.6	31			1.4	1.6	17			1.0	2.0	14
Teaching-Sharing Skills		1.1		1.4	11		1.6		1.6	31		1.4		1.5	16		1.5		1.3	13
Sharing what you have learned with others.			1.1	1.4	11			1.6	1.6	31			1.4	1.5	16			1.5	1.3	13
Leading Others		0.7		1.3	11		0.5		1.8	31		0.0		2.0	15		0.1		1.5	14
Leading other people.			0.7	1.3	11			0.5	1.8	31			0.0	2.0	15			0.1	1.5	14
3. Risk Taking	0.7			2.2	12	0.2			1.8	31	0.9			2.0	16	0.2			1.7	14
Risk Taking		-0.8		2.9	12		0.4		1.8	30		0.3		2.2	16		-0.2		2.2	13
Chancing dangerous situations.			-0.8	2.9	12			0.4	1.8	30			0.3	2.2	16			-0.2	2.2	13
Risk Moderation		1.5		1.4	11		0.6		1.9	31		1.6		2.0	16		1.1		1.1	14
Being near others who could help you if you need them.			1.5	1.4	11			0.6	1.9	31			1.6	2.0	16			1.1	1.1	14
Risk Avoidance		1.0		2.3	11		-0.5		1.7	31		0.8		1.6	16		-0.1		1.7	14
Avoiding the unexpected.			1.0	2.3	11			-0.5	1.7	31			0.8	1.6	16			-0.1	1.7	14
4. Equipment	1.2			1.9	11	1.5			1.3	31	1.8			2.2	15	2.1			1.5	14
Equipment		1.2		1.9	11		1.5		1.3	31		1.8		2.2	15		2.1		1.5	14
Using your equipment.			1.2	1.9	11			1.5	1.3	31			1.8	2.2	15			2.1	1.5	14
5. Family Togetherness	3.0			1.2	12	2.3			1.5	31	2.8			1.4	16	1.8			1.6	14
Family Togetherness		3.0		1.2	12		2.3		1.5	31		2.8		1.4	16		1.8		1.6	14
Doing something with your family.			3.4	0.8	12			2.4	1.4	31			3.2	1.4	16			2.0	1.6	14
Bringing your family closer together.			2.5	1.6	11			2.2	1.7	31			2.5	1.5	16			1.6	1.5	14

Table B-3. Continued.

Recreation Experience Preferences Domain / Scale / Item	Roadside Users Mean[a] D	S	I	S.D.	N	Backcountry Users Mean[a] D	S	I	S.D.	N	Ocean Fishermen Mean[a] D	S	I	S.D.	N	Nature Observers Mean[a] D	S	I	S.D.	N
6. Being with People	2.4			1.5	12	1.9			1.7	31	2.7			1.3	17	1.6			1.6	14
Being with Friends		2.3		1.5	11		1.6		1.6	31		2.4		1.4	17		1.1		1.6	14
Being with other members of your group.			2.0	1.8	11			1.5	1.4	31			2.2	1.4	16			0.8	1.6	14
Being with friends.			2.6	1.3	11			1.7	1.7	31			2.4	1.5	17			1.5	1.7	14
Being with Similar People		2.4		1.5	12		2.1		1.8	31		3.1		1.1	17		2.0		1.5	14
Being with others who enjoy the same thing you do.			2.4	1.5	12			2.1	1.8	31			3.1	1.1	17			2.0	1.5	14
7. Meeting-Observing New People	1.2			1.4	12	-0.9			2.1	31	1.2			1.9	16	0.0			1.9	14
Meeting New People		1.4		1.4	12		-0.3		2.0	31		1.4		1.8	16		0.4		1.9	14
Meeting other people in the area.			1.4	1.4	12			-0.3	2.0	31			1.4	1.8	16			0.4	1.9	14
Observing Other People		0.6		1.3	11		-1.5		2.2	31		1.0		1.9	15		-0.4		1.9	14
Observing other people in the area.			0.6	1.3	11			-1.5	2.2	31			1.0	1.9	15			-0.4	1.9	14
8. General Learning	2.7			1.3	13	2.8			1.2	32	2.0			1.5	17	2.7			1.1	14
General Learning		2.6		1.1	11		2.8		1.3	31		2.0		1.4	16		2.7		1.2	14
Developing your knowlege of things there.			2.6	1.1	11			2.8	1.3	31			2.0	1.4	16			2.7	1.2	14
Exploration		3.0		1.3	13		3.0		1.1	32		2.1		1.4	17		2.7		1.3	14
Experiencing new and different things.			2.7	1.3	11			3.1	1.1	32			2.1	1.3	17			2.7	1.4	14
Discovering something new.			3.0	1.2	13			2.9	1.0	32			2.1	1.5	17			2.6	1.2	14
Geography of Area		1.6		1.5	11		2.5		1.2	31		1.6		1.6	16		2.4		1.1	14
Learning about the topography of the land.			1.6	1.5	11			2.5	1.2	31			1.6	1.6	16			2.4	1.1	14
Learn About Nature		2.8		1.3	12		2.9		1.1	32		1.9		1.6	16		2.9		0.7	14
Learning more about nature.			2.8	1.3	12			2.9	1.1	32			1.9	1.6	16			2.9	0.7	14
9. Relationships with Nature	3.6			0.8	14	3.6			0.7	33	2.6			1.6	17	3.6			0.6	14
Scenery		3.7		0.7	14		3.6		0.6	32		2.5		1.7	16		3.6		0.5	14
Viewing the scenery.			3.8	0.6	14			3.7	0.5	31			2.6	1.5	16			3.6	0.5	14
Viewing the scenic beauty.			3.5	0.9	12			3.6	0.7	32			2.4	1.9	16			3.6	0.5	14
General Nature Experience		3.5		0.9	13		3.5		0.8	33		2.6		1.5	17		3.6		0.7	14
Being close to nature.			3.5	0.8	13			3.6	0.7	33			2.4	1.5	16			3.7	0.6	14
Enjoying the sounds and smells of nature.			3.4	1.0	13			3.4	0.8	32			2.7	1.4	17			3.5	0.8	14
10. Reflect on Personal Values	2.0			1.5	11	1.9			1.4	33	0.7			1.5	16	1.8			1.5	14
Spiritual		2.5		1.3	11		1.8		1.5	31		0.9		1.9	16		1.9		1.5	14
Developing personal spiritual values.			2.5	1.3	11			1.8	1.5	31			0.9	1.9	16			1.9	1.5	14
Introspection		1.6		1.6	11		1.9		1.3	33		0.5		1.2	16		1.6		1.5	14
Thinking about your personal values.			1.9	1.7	11			2.1	1.2	31			0.7	1.1	16			1.6	1.5	14
Thinking about who you are.			1.3	1.6	11			1.6	1.3	33			0.3	1.2	16			1.6	1.5	14
11. Creativity	0.8			1.4	11	1.9			1.3	32	0.7			1.8	16	2.1			1.6	14
Creativity		0.8		1.4	11		1.9		1.3	32		0.7		1.8	16		2.1		1.6	14
Being creative.			0.8	1.4	11			1.9	1.3	32			0.7	1.8	16			2.1	1.6	14
12. Nostalgia	2.1			1.7	12	1.6			1.5	32	2.0			1.5	17	1.1			1.4	14
Nostalgia		2.1		1.7	12		1.6		1.5	32		2.0		1.5	17		1.1		1.4	14
Thinking about good times you've had in the past.			2.1	1.7	12			1.6	1.5	32			2.0	1.5	17			1.1	1.4	14

Table B-3. Continued.

Recreation Experience Preferences Domain / Scale / Item	Roadside Users Mean[a] D	S	I	S.D.[b]	N	Backcountry Users Mean[a] D	S	I	S.D.[b]	N	Ocean Fishermen Mean[a] D	S	I	S.D.[b]	N	Nature Observers Mean[a] D	S	I	S.D.[b]	N
13. Exercise/Physical Fitness	2.6			1.7	12	2.8			1.2	32	2.3			1.2	16	2.8			1.1	14
Exercise/Physical Fitness		2.6		1.7	12		2.8		1.2	32		2.3		1.2	16		2.8		1.1	14
Getting exercise.			2.8	1.5	12			2.9	1.1	32			2.3	1.1	16			3.1	1.2	14
Keeping physically fit.			2.2	1.8	11			2.7	1.4	32			2.2	1.2	16			2.6	1.1	14
14. Physical Rest	3.1			1.1	12	1.8			1.7	31	2.3			1.6	15	2.5			1.7	14
Physical Rest		3.1		1.1	12		1.8		1.7	31		2.3		1.6	15		2.5		1.7	14
Relaxing physically.			3.1	1.1	12			1.8	1.7	31			2.3	1.6	15			2.5	1.7	14
15. Escape Personal-Social Pressure	2.8			1.4	12	2.8			1.4	31	2.5			1.4	16	2.4			1.4	14
Tension Release		2.3		1.7	11		2.3		1.4	31		1.8		1.3	16		2.1		1.2	14
Releasing or reducing some built-up tensions.			2.3	1.7	11			2.3	1.4	31			1.8	1.3	16			2.1	1.2	14
Slow Down Mentally		2.4		1.8	12		2.6		1.3	31		2.4		1.7	16		1.7		2.3	14
Giving your mind a rest.			2.4	1.8	12			2.6	1.3	31			2.4	1.7	16			1.7	2.3	14
Escape Role Overloads		3.2		1.3	12		3.3		1.3	31		3.0		1.3	16		3.2		0.9	14
Getting away from the usual demands of life.			3.2	1.3	12			3.3	1.3	31			3.0	1.3	16			3.2	0.9	14
Escape Daily Routine		3.3		0.9	12		2.8		1.4	31		3.0		1.3	16		2.4		1.3	13
Having a change from your daily routine.			3.3	0.9	12			2.8	1.4	31			3.0	1.3	16			2.4	1.3	13
16. Escape Physical Pressure	2.7			1.6	14	3.3			1.0	33	2.5			1.5	17	2.9			1.4	14
Tranquility		2.9		1.5	13		3.2		1.1	33		2.2		1.5	17		3.0		1.4	14
Experiencing tranquility.			2.8	1.5	12			3.3	1.0	33			1.9	1.5	15			2.7	1.7	14
Experiencing solitude.			2.0	1.8	12			2.9	1.3	31			1.4	1.8	16			2.9	1.4	13
Experiencing peace and calm.			3.6	1.2	12			3.3	1.0	32			3.0	1.3	17			3.4	1.2	14
Seek Open Space		2.8		1.6	13		3.6		0.8	32		2.8		1.6	16		3.4		0.8	14
Experiencing open space.			2.8	1.6	13			3.6	0.8	32			2.8	1.6	16			3.4	0.8	14
Privacy		1.2		1.7	11		2.7		1.4	32		1.4		1.6	16		2.6		1.8	14
Feeling isolated.			1.4	1.6	11			2.9	1.5	31			1.6	1.4	16			2.7	2.2	14
Being alone.			1.1	1.9	11			2.5	1.3	32			1.3	1.9	16			2.5	1.4	14
Escape Crowds		2.9		1.5	14		3.8		0.5	32		3.1		1.2	16		3.2		1.1	14
Being away from crowds of people.			2.9	1.5	14			3.8	0.5	32			3.1	1.2	16			3.2	1.1	14
Escape Physical Stressors		2.8		1.6	12		3.1		1.2	31		2.8		1.2	16		2.1		2.0	14
Being away from the noise back home.			2.8	1.6	12			3.1	1.2	31			2.8	1.2	16			2.1	2.0	14
17. Security	2.4			1.5	12	2.0			2.0	31	1.9			1.7	16	2.4			1.3	14
Social Security		2.4		1.5	12		2.0		2.0	31		1.9		1.7	16		2.4		1.3	14
Being near considerate people.			2.4	1.5	12			2.0	2.0	31			1.9	1.7	16			2.4	1.3	14
18. Temperature	2.0			1.9	13	1.2			1.3	30	0.9			1.5	17	0.2			1.2	14
Temperature		2.0		1.9	13		1.2		1.3	30		0.9		1.5	17		0.2		1.2	14
Having more agreeable temperatures.			2.0	1.9	13			1.2	1.3	30			0.9	1.5	17			0.2	1.2	14

[a]Means are based on responses to a nine-point response format ranging from +4 (most strongly adds) to -4 (most strongly detracts).

[b]Standard deviations for multiple-item scales are computed by averaging the standard deviations of the items within that scale. Standard deviations for multiple-scale domains are computed by averaging the standard deviations of the scales within that domain.

Table B-4. Recreation experience preference domain (D), scale (S), and item (I) means for those respondents sampled in the King Range NCA using the "importance rating" response format, grouped by their most important activity (Summer, 1979).

Recreation Experience Preferences Domain Scale Item	Roadside Users					Backcountry Users					Ocean Fishermen					Nature Observers				
	Mean[a]			S.D.[b]	N	Mean[a]			S.D.[b]	N	Mean[a]			S.D.[b]	N	Mean[a]			S.D.[b]	N
	D	S	I			D	S	I			D	S	I			D	S	I		
1. Achievement	2.9			1.5	13	3.0			1.4	42	3.2			1.5	24	2.7			1.1	10
Reinforcing Self Image		2.7		1.7	11		3.6		1.7	41		3.4		1.8	22		2.8		1.3	10
Gaining a sense of self-confidence.			2.7	1.7	11			3.6	1.7	41			3.4	1.8	22			2.8	1.3	10
Social Recognition		1.9		1.3	12		1.4		0.7	41		1.8		1.0	24		1.4		0.5	10
Showing others you can do it.			1.9	1.3	12			1.4	0.7	41			1.8	0.9	24			1.4	0.5	10
Skill Development		3.4		1.3	12		3.0		1.4	42		3.7		1.7	24		3.0		1.1	10
Becoming better at it.			3.8	1.3	11			2.9	1.4	42			3.6	1.8	24			3.0	1.1	10
Developing your skills and abilities.			3.3	1.4	12			3.0	1.4	42			3.7	1.6	23			3.0	1.2	10
Competence Testing		3.1		1.5	13		3.3		1.6	42		3.2		1.4	24		2.9		1.2	10
Testing your abilities.			3.1	1.5	13			3.3	1.6	42			3.2	1.4	24			2.9	1.2	10
Seeking Stimulation		3.3		1.5	12		3.5		1.4	42		3.8		1.8	24		3.6		1.3	10
Experiencing excitement.			2.8	1.5	12			2.8	1.5	42			3.8	1.7	24			3.5	1.4	10
Experiencing feelings of exhilaration.			3.7	1.4	12			4.3	1.2	42			3.8	1.9	24			3.7	1.2	10
2. Leadership/Autonomy	2.9			1.3	13	3.0			1.3	42	3.1			1.6	24	3.0			1.2	10
Independence		3.4		1.5	13		4.1		1.5	42		3.6		1.9	24		3.4		1.6	10
Feeling your independence.			3.4	1.5	13			4.2	1.6	42			3.4	1.8	24			3.4	1.8	10
Being on your own.			3.5	1.5	11			3.9	1.3	41			3.8	2.0	24			3.4	1.5	10
Autonomy		3.7		1.5	13		2.9		1.6	42		3.5		1.8	24		3.4		1.6	10
Being your own boss.			3.7	1.5	13			2.9	1.6	42			3.5	1.8	24			3.4	1.6	10
Control Power		3.5		1.1	11		3.5		1.2	41		4.0		1.8	24		3.6		1.2	9
Being in control of things that happen.			3.5	1.1	11			3.5	1.2	41			4.0	1.8	24			3.6	1.2	9
Teaching-Sharing Skills		2.4		1.2	12		3.0		1.5	41		2.7		1.5	24		3.0		0.9	10
Sharing what you have learned with others.			2.4	1.2	12			3.0	1.5	41			2.7	1.5	24			3.0	0.9	10
Leading Others		1.8		1.2	13		1.5		0.7	42		1.6		0.8	22		1.9		0.7	10
Leading other people.			1.8	1.2	13			1.5	0.7	42			1.6	0.8	22			1.9	0.7	10
3. Risk Taking	3.1			1.3	13	2.0			1.1	42	2.7			1.7	24	2.3			1.1	10
Risk Taking		1.8		1.3	12		1.9		1.1	41		2.2		1.6	23		1.8		1.0	10
Chancing dangerous situations.			1.8	1.3	12			1.9	1.1	41			2.2	1.6	23			1.8	1.0	10
Risk Moderation		3.6		1.5	13		2.2		1.1	42		3.1		1.7	24		2.6		1.1	10
Being near others who could help you if you need them.			3.6	1.5	13			2.2	1.1	42			3.1	1.7	24			2.6	1.1	10
Risk Avoidance		4.0		1.2	11		2.0		1.2	41		2.7		1.7	24		2.4		1.1	10
Avoiding the unexpected.			4.0	1.2	11			2.0	1.2	41			2.7	1.7	24			2.4	1.1	10
4. Equipment	3.8			1.5	13	2.6			1.5	41	4.3			1.5	24	2.9			1.5	10
Equipment		3.8		1.5	13		2.6		1.5	41		4.3		1.5	24		2.9		1.5	10
Using your equipment.			3.8	1.5	13			2.6	1.5	41			4.3	1.5	24			2.9	1.5	10
5. Family Togetherness	4.7			1.4	13	3.8			1.4	42	4.4			1.8	24	4.2			1.7	10
Family Togetherness		4.7		1.4	13		3.8		1.4	42		4.4		1.8	24		4.2		1.7	10
Doing something with your family.			5.3	1.1	12			4.0	1.5	42			4.7	1.6	24			4.7	1.6	10
Bringing your family closer together.			4.0	1.6	13			3.6	1.4	42			4.0	1.9	21			3.6	1.8	10

Table B-4. Continued.

Recreation Experience Preferences Domain Scale Item	Roadside Users Mean[a] D S I	S.D.[b]	N	Backcountry Users Mean[a] D S I	S.D.[b]	N	Ocean Fishermen Mean[a] D S I	S.D.[b]	N	Nature Observers Mean[a] D S I	S.D.[b]	N
6. Being with People	4.0	1.5	13	3.3	1.4	42	3.8	1.5	24	3.1	1.6	10
Being with Friends	4.0	1.4	13	3.0	1.4	42	3.5	1.5	24	3.2	1.8	10
Being with other members of your group.	3.6	1.5	13	2.6	1.3	42	3.2	1.7	24	2.8	1.8	10
Being with friends.	4.3	1.4	12	3.4	1.4	42	4.0	1.3	23	3.5	1.7	10
Being with Similar People	4.0	1.6	12	3.6	1.5	41	4.1	1.4	24	3.0	1.5	10
Being with others who enjoy the same thing you do.	4.0	1.6	12	3.6	1.5	41	4.1	1.4	24	3.0	1.5	10
7. Meeting-Observing New People	2.5	1.4	12	1.6	0.8	42	1.8	1.1	24	2.0	0.8	10
Meeting New People	2.8	1.5	12	1.8	0.9	41	2.3	1.4	23	2.4	1.1	10
Meeting other people in the area.	2.8	1.5	12	1.8	0.9	41	2.3	1.4	23	2.4	1.1	10
Observing Other People	2.2	1.2	12	1.4	0.8	42	1.3	0.8	23	1.6	0.5	10
Observing other people in the area.	2.2	1.2	12	1.4	0.8	42	1.3	0.8	23	1.6	0.5	10
8. General Learning	3.9	1.0	13	4.5	1.2	42	3.8	1.5	24	4.4	1.2	10
General Learning	4.2	1.4	12	4.6	1.3	42	3.9	1.5	23	4.2	1.5	10
Developing your knowledge of things there.	4.2	1.4	12	4.6	1.3	42	3.9	1.5	23	4.2	1.5	10
Exploration	4.4	0.8	13	4.7	1.1	42	3.8	1.6	24	4.5	1.0	10
Experiencing new and different things.	4.5	0.9	13	4.9	1.0	42	3.8	1.5	23	4.7	0.9	10
Discovering something new.	4.2	0.7	13	4.5	1.2	41	3.7	1.8	24	4.3	1.1	10
Geography of Area	3.4	1.1	12	3.8	1.2	42	2.9	1.4	23	3.9	1.3	10
Learning about the topography of the land.	3.4	1.1	12	3.8	1.2	42	2.9	1.4	23	3.9	1.3	10
Learning About Nature	4.0	1.2	12	4.7	1.2	40	4.3	1.4	23	5.1	0.9	9
Learning more about nature.	4.0	1.2	12	4.7	1.2	40	4.3	1.4	23	5.1	0.9	9
9. Relationships with Nature	5.0	0.8	13	5.6	0.7	42	4.8	1.2	24	5.2	0.7	10
Scenery	5.1	0.6	13	5.5	0.6	42	4.7	1.2	24	5.3	0.7	10
Viewing the scenery.	5.2	0.4	13	5.6	0.6	42	4.8	1.0	24	5.4	0.7	10
Viewing the scenic beauty.	4.8	0.7	12	5.5	0.7	42	4.7	1.4	23	5.2	0.6	10
General Nature Experience	5.0	1.0	13	5.6	0.7	42	4.8	1.2	24	5.2	0.8	10
Being close to nature.	5.2	0.9	13	5.7	0.6	42	5.0	0.9	23	5.1	0.7	10
Enjoying the sounds and smells of nature.	4.8	1.0	12	5.5	0.7	42	4.5	1.5	24	5.2	0.8	10
10. Reflect on Personal Values	3.6	1.7	13	4.0	1.6	42	2.7	1.5	24	3.3	1.3	10
Spiritual	3.9	1.7	12	4.2	1.6	42	3.4	1.8	24	3.8	1.4	10
Developing personal spiritual values.	3.9	1.7	12	4.2	1.6	42	3.4	1.8	24	3.8	1.4	10
Introspection	3.5	1.7	13	3.8	1.7	42	2.1	1.2	24	2.7	1.3	10
Thinking about your personal values.	3.6	1.7	13	3.9	1.7	42	2.5	1.4	24	3.0	1.2	10
Thinking about who you are.	3.3	1.7	12	3.6	1.7	42	1.7	1.0	24	2.4	1.3	10
11. Creativity	3.1	1.3	12	3.4	1.6	41	2.8	1.7	24	3.4	1.5	10
Creativity	3.1	1.3	12	3.4	1.6	41	2.8	1.7	24	3.4	1.5	10
Being creative.	3.1	1.3	12	3.4	1.6	41	2.8	1.7	24	3.4	1.5	10
12. Nostalgia	3.3	1.5	13	2.5	1.5	42	2.7	1.5	24	2.7	1.3	10
Nostalgia	3.3	1.5	13	2.5	1.5	42	2.7	1.5	24	2.7	1.3	10
Thinking about good times you've had in the past.	3.3	1.5	13	2.5	1.5	42	2.7	1.5	24	2.7	1.3	10

Table B-4. Continued.

Recreation Experience Preferences Domain Scale Item	Roadside Users				Backcountry Users				Ocean Fishermen				Nature Observers			
	Mean[a]		S.D.[b]	N	Mean[a]		S.D.[b]	N	Mean[a]		S.D.[b]	N	Mean[a]		S.D.[b]	N
	D	S I			D	S I			D	S I			D	S I		
13. Exercise/Physical Fitness	4.1		1.7	13	4.5		1.3	42	3.9		1.5	24	4.2		1.1	10
Exercise/Physical Fitness		4.1	1.7	13		4.5	1.3	42		3.9	1.5	24		4.2	1.1	10
Getting exercise.		4.2	1.7	13		4.8	1.1	42		3.8	1.7	24		4.3	0.8	10
Keeping physically fit.		3.9	1.6	12		4.2	1.5	42		4.1	1.4	24		4.1	1.4	10
14. Physical Rest	4.8		1.4	13	3.7		1.7	42	4.0		1.6	24	3.3		1.6	10
Physical Rest		4.8	1.4	13		3.7	1.7	42		4.0	1.6	24		3.3	1.6	10
Relaxing physically.		4.8	1.4	13		3.7	1.7	42		4.0	1.6	24		3.3	1.6	10
15. Escape Personal-Social Pressure	5.2		0.8	13	4.7		1.3	42	4.9		1.3	24	4.3		1.6	10
Tension Release		4.9	1.1	12		4.3	1.6	42		4.3	1.7	23		3.8	1.5	10
Releasing or reducing some built-up tensions.		4.9	1.1	12		4.3	1.6	42		4.3	1.7	23		3.8	1.5	10
Slow Down Mentally		4.8	1.0	12		4.7	1.3	42		4.5	1.6	24		4.2	1.5	10
Giving your mind a rest.		4.8	1.0	12		4.7	1.3	42		4.5	1.6	24		4.2	1.5	10
Escape Role Overloads		5.5	0.5	13		5.1	1.1	42		5.3	1.1	24		4.7	1.7	10
Getting away from the usual demands of life.		5.5	0.5	13		5.1	1.1	42		5.3	1.1	24		4.7	1.7	10
Escape Daily Routine		5.4	0.7	13		4.8	1.1	42		5.3	0.8	23		4.5	1.5	10
Having a change from your daily routine.		5.4	0.7	13		4.8	1.1	42		5.3	0.8	23		4.5	1.5	10
16. Escape Physical Pressure	4.6		1.0	13	5.0		1.2	42	4.3		1.6	24	4.6		1.1	10
Tranquility		4.6	1.0	13		5.0	1.1	42		4.5	1.4	24		4.4	1.3	10
Experiencing tranquility.		4.7	0.8	12		5.2	0.9	42		4.4	1.4	24		4.2	1.3	10
Experiencing solitude.		4.3	1.3	12		4.3	1.7	42		3.5	2.0	24		4.0	1.4	10
Experiencing peace and calm.		4.8	0.8	13		5.6	0.6	41		5.5	0.7	24		5.1	1.1	9
Seek Open Space		5.2	0.7	12		5.5	0.8	42		4.3	1.7	24		4.9	0.9	10
Experiencing open space.		5.2	0.7	12		5.5	0.8	42		4.3	1.7	24		4.9	0.9	10
Privacy		3.2	1.6	13		4.0	1.7	42		3.2	1.8	24		3.5	1.7	10
Feeling isolated.		3.0	1.5	11		4.2	1.8	41		3.3	1.7	24		3.2	1.7	9
Being alone.		3.4	1.8	12		3.8	1.6	42		3.0	1.9	24		3.5	1.8	10
Escape Crowds		5.3	0.9	13		5.4	0.8	42		4.6	1.8	24		5.2	0.6	10
Being away from crowds of people.		5.3	0.9	13		5.4	0.8	42		4.6	1.8	24		5.2	0.6	10
Escape Physical Stressors		4.7	0.6	11		4.8	1.5	41		4.8	1.4	23		5.1	0.9	9
Being away from noise back home.		4.7	0.6	11		4.8	1.5	41		4.8	1.4	23		5.1	0.9	9
17. Security	4.6		1.8	13	3.7		1.7	42	4.1		1.7	23	3.8		1.5	10
Social Security		4.6	1.8	13		3.7	1.7	42		4.1	1.7	23		3.8	1.5	10
Being near considerate people.		4.6	1.8	13		3.7	1.7	42		4.1	1.7	23		3.8	1.5	10
18. Temperature	3.4		1.2	12	2.6		1.3	40	2.7		1.8	21	2.3		1.4	10
Temperature		3.4	1.2	12		2.6	1.3	40		2.7	1.8	21		2.3	1.4	10
Having more agreeable temperatures.		3.4	1.2	12		2.6	1.3	40		2.7	1.8	21		2.3	1.4	10

[a]Means are based on responses to a six-point response format ranging from 6 (extremely important) to 1 (not important).

[b]Standard deviations for multiple-item scales are computed by averaging the standard deviations of the items within that scale. Standard deviations for multiple-scale domains are computed by averaging the standard deviations of the scales within that domain.

APPENDIX C

MANAGEMENT ACTION PREFERENCES

Table C-1. Driving time to the King Range NCA from residence of respondents sampled, grouped by respondents most important activity (Summer, 1979).[a]

Driving Time To The King Range NCA	Camping Near Auto/Picnicking/ Sightseeing (N=26) Percent[b]	Camping Away From Auto/Hiking (N=76) Percent[b]	Ocean Fishing (N=41) Percent[b]	Nature Study/ Wildlife Viewing/Photography (N=23) Percent[b]
Within one hour	12	7	10	4
One to four hours	15	24	29	17
Other California	58	61	61	57
Out-of-state	15	9	0	22

[a]Residence is based on zip code of respondent's permanent address.

[b]Percentage values are calculated based on the number of respondents (indicated by N) with valid zip codes.

Table C-2. Management item means and standard deviations for respondents sampled in the King Range NCA grouped by their most important activity (Summer, 1979).

Possible Management Actions	Roadside Users (N=25)[a]		Backcountry Users (N=71)[a]		Ocean Fishermen (N=38)[a]		Nature Observers (N=22)[a]	
	Mean[b]	S.D.[c]	Mean[b]	S.D.[c]	Mean[b]	S.D.[c]	Mean[b]	S.D.[c]
Expand the present hiking trails to connect the King Crest Trail system to beach areas.	2.6	1.9	2.8	1.9	1.8	2.3	3.1	1.0
Maintain closure of beach areas to motor vehicle use near archaeological sites.	2.9	2.0	3.1	2.1	1.7	2.9	2.8	2.1
Maintain closure of beach areas to motor vehicle use between Gitchell Creek and the Mattole River.	1.6	2.8	3.0	2.3	1.5	3.2	2.3	2.5
Provide drinking water, toilets, and trash receptacles at the trailhead of the King Crest Trail.	2.9	1.5	1.7	2.6	1.9	2.8	2.6	1.2
Provide drinking water, toilets, and trash receptacles at the Black Sands Beach near Telegraph Creek.	2.5	2.3	1.6	2.7	1.7	3.1	2.6	1.2
Designate some areas in the King Range NCA as wilderness	2.1	2.2	2.9	1.9	.4	3.2	2.5	1.8
Provide drinking water, toilets, and trash receptacles at the mouth of the Mattole River.	2.7	1.9	1.2	3.1	1.9	2.8	2.5	1.8
Interpretive information describing natural history, cultural and archaeological sites.	2.1	2.3	1.6	2.3	.2	2.7	2.0	1.4
More locational and directional signs.	2.1	2.3	.7	2.7	1.5	2.5	1.7	1.4
More maps and brochures.	1.7	2.3	.8	2.7	1.2	2.4	2.1	1.4
More ranger personnel.	1.3	2.3	.7	2.3	.2	2.8	1.1	2.0
Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek.	.7	2.7	-1.7	2.8	.4	3.2	-.1	2.8
Permit motor vehicle use on beach areas between Punta Gorda and the Mattole River.	.6	2.9	-2.1	2.8	-.2	3.4	-1.0	2.7
A visitor center.	.5	3.2	-.9	2.7	-1.3	2.8	.5	2.3
Improved camper trailer facilities.	1.9	2.9	-2.0	2.6	.4	3.2	-1.7	2.7
Improving the road quality within the King Range NCA.	1.6	2.8	-1.5	2.8	-.6	3.3	-.8	2.4
Upgrading the access roads to the King Range NCA.	1.2	3.0	-1.8	2.7	-.5	3.3	-1.6	2.5

[a]Calculations for each management item were based on at least the number of respondents indicated by N.

[b]Means are based on responses to a nine-point response format ranging from +4 (very strongly favor) to -4 (very strongly oppose).

[c]Standard deviation (S.D.) is a measure of variation in the responses around the mean score.

APPENDIX D

RECREATION OPPORTUNITY SPECTRUM OPINIONS

Table D-1. Area characteristic scale and item means and standard deviations for respondents sampled in the King Range NCA (Summer, 1979).[a]

Area Characteristic Scales and Items[b]	Mean[c]		Standard Deviation[d]		Number of Respondents		Alpha[e]
	Scale	Item	Scale	Item	Scale	Item	
Size of area	3.5		2.1		56		---
Large/small		3.5		2.1		56	
Amount of regulation	3.3		2.0		80		---
Management actions and controls were not apparent/management actions and controls were very apparent		3.3		2.0		80	
Amount of development	2.5		1.7		79		---
Had no facilities for visitor use/had many facilities for visitor use		2.5		1.7		79	
Remoteness of area	3.3		2.0		80		.82
Sights and sounds of man were practically non-existent/ sights and sounds of man were quite evident		3.4		2.1		80	
Had no other users/had many other users		3.8		1.9		77	
Provided good opportunities to realize a sense of remoteness or isolation from civilization/provided no opportunities to realize a sense of remoteness or isolation from civilization		2.5		1.7		79	
No motorized vehicles were present/many motorized vehicles were present		3.6		2.2		80	
Opportunities for challenge and use of outdoor skills	2.6		1.5		80		.78
Offered many opportunities for outdoor challenges/offered no opportunities for outdoor challenges		2.5		1.4		79	
Offered many opportunities to use outdoor skills/offered no opportunities to use outdoor skills		2.7		1.6		80	

[a]The following two items from the questionnaire were not included in this analysis: (1) Demanded much physical effort to reach your destination/Demanded little physical effort to reach your destination, and (2) Provided good opportunity to get away from roads with motorized vehicles/Provided no opportunity to get away from roads with motorized vehicles.

[b]The area characteristics (scales) are described by a series of items, each having two labeled end-points (separated by a slash, above). Respondents checked one of seven blank spaces between the end-points according to their perception of the area where they recreated (See Appendix A, Figure A-2 (Buff), Question VII).

[c]Means are based on responses to a seven-point response format.

[d]Standard deviations for multiple-item scales are computed by averaging the standard deviations of the items within that scale.

[e]Alpha reliability for scales containing more than one item using the Cronbach alpha computation for internal consistency.

Table D-2. Preferences for recreation setting attributes of respondents sampled in the King Range NCA (Summer, 1979).

	Like Percent	Dislike Percent	Unimportant Percent	Number of Respondents
Setting 1 - Primitive				
Remote, usually greater than 3 miles from roads	63	13	24	98
Unmodified natural environment over 5,000 acres	78	4	18	99
Very little concentration or evidence of other users	84	4	12	100
Very low user density providing very few contacts with other users	80	6	14	100
Managed without on-site regulation of users	66	22	12	99
Free of most facilities	69	15	16	101
Free of any resource uses which significantly disturb the natural environment	83	6	11	100
Free of motorized use	73	15	12	100
Setting 2 - Semi-Primitive Non-Motorized				
Moderately remote, usually greater than 1/2 mile from roads	74	7	19	95
Predominately unmodified natural environment of over 2,500 acres	77	4	19	94
Little, but some concentration or evidence of other users	67	11	22	92
Low user density providing few, but some, contact with other users	70	9	22	92
Managed with minimum on-site regulation of users	76	13	12	95
A few facilities are provided for resource protection and safety of users	82	7	11	94
Free of most resource uses which significantly disturb the natural environment	82	6	12	95
Free of motorized use	72	17	11	93
Setting 3 - Semi-Primitive Motorized				
Moderately remote, usually greater than 1/2 mile from roads	74	8	19	92
Predominately unmodified natural environment of over 2,500 acres	77	6	18	91
Little, but some concentration or evidence of other users	59	19	22	91
Low user density providing few, but some, contacts with other users	65	13	22	92
Managed with minimum on-site regulation of users	71	18	11	90
A few facilities are provided for resource protection and safety of users	79	8	13	91
Free of most resource uses which significantly disturb the natural environment	80	7	13	92
Motorized use is allowed but generally restricted to 4-wheel drive vehicles and off-road motorcycles	25	67	8	92
Setting 4 - Roaded Natural				
Some of area remote, some along roads	66	14	20	92
Environment appears to be generally natural	88	7	5	92
Moderate concentration of users occurs and there are noticeable evidences of other users	25	59	16	92
Contacts with other users are expected, but not constant	52	20	28	92
Managed with on-site regulation of users	42	44	14	91
Rustic facilities available for resource protection and convenience and safety of users	64	15	21	92
Resource uses like timbering and grazing might be evident	18	56	26	91
Automobile use is allowed and common	25	55	20	92
Setting 5 - Semi-Rural				
Area is along roads	24	65	12	93
Environment is substantially modified from natural with some urban type developments	4	88	8	96
Concentration of users is high and there are noticeable evidences of other users	2	90	8	96
Contacts with other users are frequent	6	79	15	94
Managed with on-site regulations of users	33	55	13	95
Modern, high standard, and generally large facilities are provided for users	10	82	8	95
Resource use allowed include timbering, grazing, water development and tourist and shopping areas	4	83	13	95
Automobile use is allowed and common	17	66	17	94

APPENDIX E

SUMMARY OF EXIT INTERVIEW DATA

I. INTRODUCTION

During FY79 the Bureau of Land Management (BLM) provided research funds to replicate a procedure used in previous studies on public land (Arkansas River/Little Sahara). The original procedure was developed to implement Objective 2 of the Revised Research Proposal of July 1976, submitted by the Rocky Mountain Station (RMS) and Colorado State University (CSU) to the BLM. Objective 2 stated that the RMS would "develop a procedure using field observation and on-site surveys, including traffic counters and road stops, to quantify outdoor recreationists' preferences at areas used intensively for dispersed recreation." The King Range National Conservation Area was selected as the site for replication of the research using FY79 funds. One sub-objective of that research was to measure and quantify recreation participation using exit (roadside) interview data and inductive loop counter information in the King Range. This report summarizes the results of the analyses performed on data gathered during the exit interview procedure.[1]

Exit Interview Procedures

The field work for the King Range study began on June 10, 1979 and ended on September 10, 1979. Interviewers were hired to stop vehicles exiting the study area and question passengers for two to three minutes regarding their recreation participation in the King Range.[2] The interviews were

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[1]This report was previously submitted as a Progress Report describing recreation use in the King Range. Appreciation is extended to Judi Zuckert for her help in the report preparation.

[2]The sampling design and interviewing procedures are described in more detail in the Introduction to the Final Report.

conducted at four roadside traffic-stop stations. These locations are designated on the Figure 1 map of the study area by a letter next to an X enclosed in a circle. The four stations were Thorn Junction (T), Petrolia (P), Honeydew (H), and Four Corners (F). Figure 1 also shows the study area zones. Zone selection was accomplished with help from BLM planners in Ukiah, and closely approximates the zone structure outlined in the King Range Proposed Management Program. Zone 8 was added to provide better information about beach use in the beach corridor north of Shelter Cove. Due to the difficulty of selecting a roadside interview location and expected low levels of recreation participation, zone 5 (not shown in Figure 1) south of the Four Corners interview station was not included in the study area for this research.

Table 1 displays the exit interview statistics for three of the roadside interview locations selected for summer sampling. Sampling at the fourth interview station, Four Corners, was discontinued due to low use levels. After 18 hours of interviewing at that station, only two recreation interviews were obtained.[3] The remaining three stations accounted for 493 recreation interviews from a total of 965 stopped vehicles. Forty-four percent of the Thorn Junction interviews, 78 percent of the Petrolia interviews, and 64 percent of the Honeydew interviews were recreation interviews in which the respondent indicated recreation participation in the study area on that trip. Overall, 51 percent of the respondents had engaged in recreation in the King Range.[4]

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[3]The analysis of the exit interview questionnaire data includes the two interviews from the Four Corners station, which brings the total number of recreation interviews to 495.

[4]Ocean fishing from a boat, for example, did not actually occur in the King Range, but was included in the recreation summary since the recreation engagement began in the King Range. When interpreting the data, it is important to remember the location of the interview stations to fully understand the meaning of the results.

Figure 1. Map of study area.

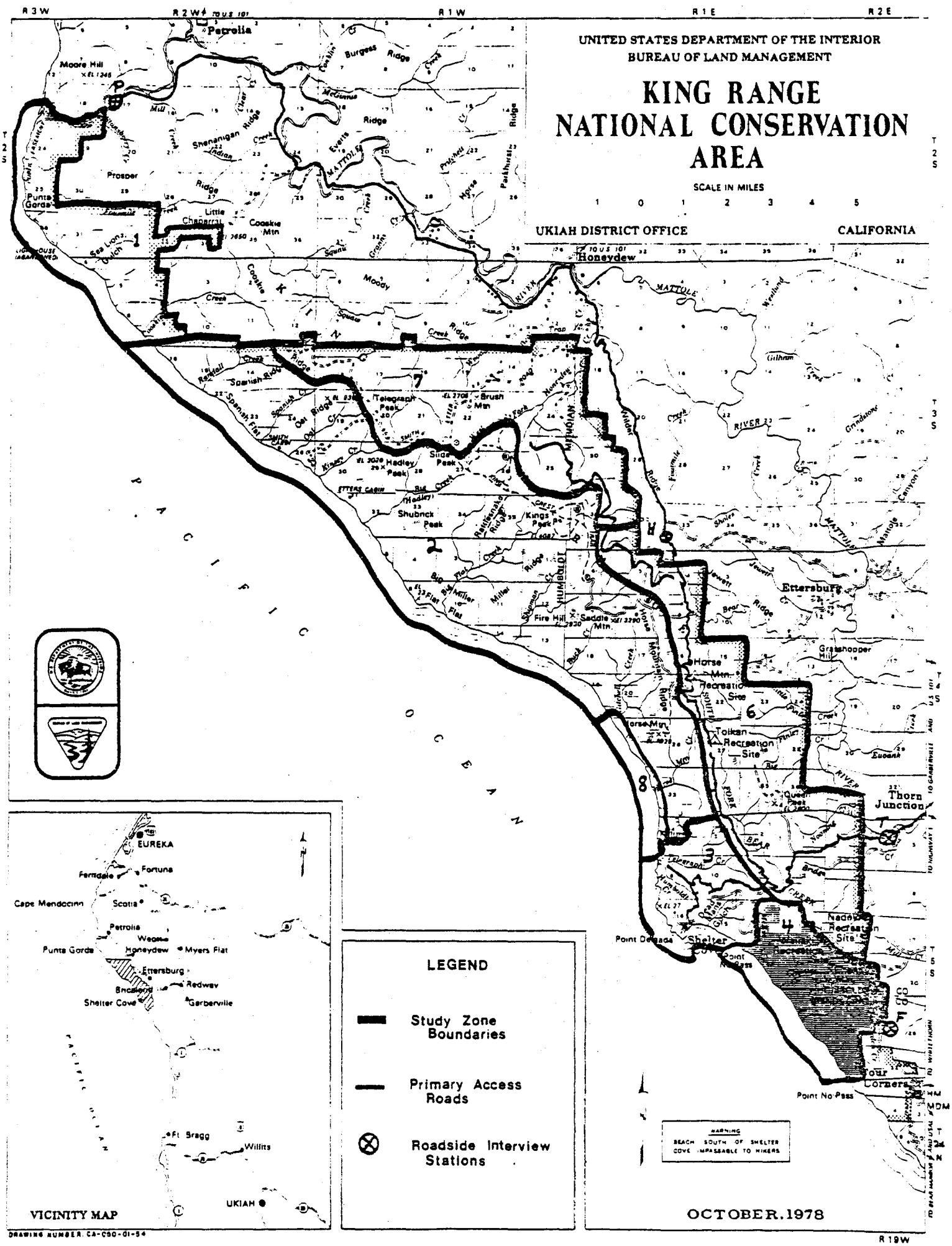

Table 1. Summary of exit interviewing, by station for the King Range NCA (Summer, 1979).

Station	Number of Interview Days	Total Hours of Interviewing	Total Traffic Exiting during Interview Periods[a]	Total Number of Interviews[b]	Total Recreation Interviews[c]
Thorn Junction (T)	30	170	1159	740	322
Petrolia (P)	33	188	221	186	146
Honeydew (H)	17	102	42	39	25
Total	80	460	1422	965	493

[a]Direct count of traffic exiting each station during the interview period, summed across all interview periods by station.

[b]Total completed interviews include both recreation and nonrecreation interviews. Nonresponse is not included in this figure, but accounted for 3 percent of all interviews.

[c]Number of interviews in which respondent had engaged in recreation in the study area.

The total traffic exiting each interview station across all interview periods during the summer sampling period is also listed in Table 1. The total number of interviews is less than the total traffic at all stations since vehicles are allowed to pass by while an interview is in progress. The rate of traffic flow (total traffic divided by total hours of interviewing) at the Thorn Junction station was highest, followed by Petrolia and Honeydew.

Across the 92 day summer sampling period interviewing occurred at Thorn Junction on 33 percent of the days (30 days), at Petrolia on 36 percent of the days (33 days), and at Honeydew on 18 percent of the days (17 days). These sampling percentages at each interview station are all well above the sampling levels normally achieved for this type of sampling. Further discussion of the "adequacy" and "representativeness" of the sampling in the King Range is presented in Exhibit A of this report.

Sample Data Analysis

The sample data collected on each exit interview form[5] at the roadside interview stations were coded, keypunched on computer cards, and verified during October, 1979. Data from 495 recreation interviews were analyzed using the Statistical Package for the Social Sciences[6] (SPSS) computer programs. Several statistical programs (frequencies, crosstabs, and breakdowns) from SPSS were used to produce descriptive and summary statistics on selected questionnaire data. These statistics included the number of responses, percentages in each response category, means, and rank orders. Calculation of each of these statistics is discussed below.

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[5]The exit interview form and interviewer instructions for use of that form are in Exhibit B of this report.

[6]Nie et al., 1975.

The determination of the number of responses, percentages, and means was straightforward. The number of responses pertains to a count of the respondents answering in a particular response category for each question. A percentage in a response category was determined by dividing the number of responses in that category by the total number of responses across all response categories for that question. The mean (average) response to selected questions was computed by dividing the sum of all the responses by the number of respondents.

Rank orders are reported to indicate the relative importance (highest to lowest) of a series of scores or numbers listed in the tables of this report. The number having the highest value received a rank of one with subsequent scores ranked sequentially in descending order from highest to lowest. Two or more scores with equal values were ranked the same, but were each counted individually to reflect proper ranking of subsequent data. For example, a column of rank orders might show number one rankings for each of three equal scores followed by the next score ranked fourth. That score was ranked fourth, instead of second or third, because there were three scores with higher values.

II. RESULTS

Sample Data Results

Respondents questioned during the exit interview procedure provided information about activity participation, area of recreation engagement, time spent in the study area, time spent in study area zones, and previous visits to the study area. In addition, interviewers observed the type of vehicle and the number of people in the vehicle and party. These data are discussed in this section.

Total sample participation in all recreation activities mentioned by respondents engaging in recreation in the King Range is shown in Table 2. Forty-one percent of the respondents visiting the King Range engaged in sightseeing/auto driving. Rank orders were assigned to activities based on the number of respondents engaging in each activity. Other activities with high participation levels besides sightseeing include hiking, ocean fishing, picnicking, and camping.

The "most important" activity of each respondent was determined by asking which activity was most important as a reason for visiting the King Range. Responses to this question form the basis for several tables in this report. It is important to be familiar with the terminology "most important" activity and with how that differs from activity participation data in Table 2.

Sightseeing, hiking, camping, and ocean fishing were all listed as most important activities by more than 5 percent of the sample (Table 3). Sightseeing is overwhelmingly the most important activity mentioned most frequently by King Range users. In combination, Tables 2 and 3 show clearly that King Range users engage in a variety of activities during their visits,

Table 2. Number of respondents sampled indicating participation in specific activities in King Range NCA study area (Summer, 1979).[a]

Activity	Number of Respondents[b]	Percent[c]	Rank Order[d]
Sightseeing/auto driving	204	41	1
Hiking/walking (beach)	127	26	2
Camping near auto	74	15	3
Ocean fishing (from shore)	69	14	4
Ocean fishing (from boat)	66	13	5
Picnicking (beach)	48	10	6
Picnicking (other)	35	7	7
Camping away from auto (beach)	29	6	8
Collecting resource products	28	6	9
Wildlife viewing	22	4	10
Other	22	4	10
Hiking/walking (other)	20	4	12
Photography	19	4	13
Sunbathing	15	3	14
Visiting friends/family	14	3	15
Camping away from auto (other)	10	2	16
Motorcycling	9	2	17
Surfing	8	2	18
Four-wheel driving	6	1	19
Own property	6	1	19
Swimming	5	1	21
Nature study	4	.8	22
Hunting	2	.4	23
Bicycling	2	.4	23
Freshwater fishing	1	.2	24
Historical study	1	.2	24

[a]Since recreationists could participate in more than one activity, the percent columns will not total 100 percent.

[b]Number of respondents sampled who indicated recreation participation in listed activities.

[c]Percentage values are based on N=495 respondents answering this question.

[d]Activities are ranked in descending order based on the number of respondents in each activity. Tied scores are given the same rank.

Table 3. Most important activity of the respondents sampled in the King Range NCA study area (Summer, 1979).

Most Important Activity[a]	Number of Respondents[b]	Percent[c]
Sightseeing/auto driving	171	35
Hiking/walking (beach)	68	14
Ocean fishing (from boat)	60	12
Ocean fishing (from shore)	59	12
Camping near auto	28	6
Other	21	4
Visiting friends/family	14	3
Camping away from auto (beach)	12	2
Picnicking (beach)	11	2
Motorcycling	8	2
Camping away from auto (other)	7	1
Surfing	7	1
Own property	6	1
Hiking/walking (other)	5	1
Collecting resource products	4	.8
Picnicking (other)	4	.8
Four-wheel driving	3	.6
Swimming	3	.6
Hunting	2	.4
Freshwater fishing	1	.2
Photography	1	.2

[a]Activities are listed in descending order based on the number of respondents.

[b]Number of respondents sampled who listed one of the activities as the most important activity to them as a reason for visiting the KRNCA.

[c]Percentage values are based on N=495 respondents answering this question.

and some activities such as wildlife viewing, photography, picnicking, and sunbathing are engaged in frequently during visits to participate in other most important activities.

The majority of the recreation participation engaged in by the King Range sample occurred in zones 1, 3, and 6 (Table 4; also refer to Figure 1 for zone locations). Sixty-one percent of the respondents visited the area around Shelter Cove during their visit to the King Range. The pattern of zone use corresponds directly with the major travel corridors through the King Range. The three high use zones all contain the major access roads. This confirms sightseeing as the major recreation activity in the area.

Another indication of participation in specific areas of the King Range was elicited from respondents when they were questioned about their most important activity. After indicating their most important activity, respondents were asked where they engaged in that activity the most (primary zone). Zones 1 and 3 continue to show the highest rates of recreation use (Table 5).

Table 6 is a synthesis of the information presented in Tables 3 and 5. It shows the most important activity for the King Range sample of visitors categorized by their primary zone of recreation participation. This helps identify the activities which are important in different areas of the King Range. For example, 35 percent of the respondents who reported zone 1 as their primary zone stated that hiking/walking on the beach was their most important activity. For users of zone 3, the activity mentioned the most was sightseeing, followed by ocean fishing from a boat and from shore. In addition to hiking/walking on the beach, many zone 1 users engaged in sightseeing, camping near the auto, or camping away from the auto.

Data from the question ascertaining the number of nights spent in the King Range by each respondent are listed in Table 7. Thirty-five percent

Table 4. Number of respondents recreating in specific zones in the King Range NCA study area sample (Summer, 1979).

Zone	Number of Respondents[a]	Percent[b]
1	148	30
2	13	3
3	303	61
4	23	5
6	86	17
7	1	.2
8	10	2

[a]Number of respondents indicating recreation participation in one or more of the listed zones.

[b]Percent values are based on N=495 respondents answering this question. Some respondents visited more than one zone, so the percentage totals will sum to more than 100 percent.

Table 5. Primary zone in which respondents indicated recreation participation in their most important activity in the King Range NCA (Summer, 1979).

Zone	Number of Respondents[a]	Percent[b]
1	148	30
2	8	2
3	291	59
4	19	4
6	24	5
7	0	0
8	4	.8

[a]Number of respondents indicating the listed zone as the primary zone for participation in their "most important" activity.

[b]Percent values are based on N=494 respondents answering this question.

Table 6. Most important activity indicated by respondents sampled, detailing primary zone of activity participation, for King Range NCA study area (Summer, 1979).

Most Important Activity[a]	Zone 1		Zone 2		Zone 3		Zone 4		Zone 6		Zone 8	
	N[b]	Percent[c]	N[b]	Percent[c]	N[b]	Percent[c]	N[b]	Percent[c]	N[b]	Percent[c]	N[b]	Percent[c]
Sightseeing/auto driving	28	19	0	--	130	45	3	16	8	33	1	25
Hiking/walking (beach)	52	35	4	50	11	4	0	--	0	--	1	25
Ocean fishing (from boat)	1	.7	0	--	59	20	0	--	0	--	0	--
Ocean fishing (from shore)	21	4	0	--	38	13	0	--	0	--	0	--
Camping near auto	11	7	0	--	7	2	8	42	1	4	1	25
Other	6	4	0	--	12	4	0	--	3	13	0	--
Visiting friends/family	0	--	0	--	12	4	0	--	2	8	0	--
Camping away from auto (beach)	10	7	0	--	1	.3	0	--	0	--	1	25
Picnicking (beach)	7	5	0	--	4	1	0	--	0	--	0	--
Motorcycling	1	.7	0	--	1	.3	1	5	5	21	0	--
Camping away from auto (other)	1	.7	1	13	0	--	4	21	1	4	0	--
Surfing	1	.7	0	--	6	2	0	--	0	--	0	--
Own property	0	--	0	--	6	2	0	--	0	--	0	--
Hiking/walking (other)	0	--	3	37	1	.3	0	--	1	4	0	--
Collecting resource products	2	1	0	--	1	.3	0	--	1	4	0	--
Picnicking (other)	1	.7	0	--	0	--	3	16	0	--	0	--
Four-wheel driving	1	.7	0	--	1	.3	0	--	1	4	0	--
Swimming	3	2	0	--	0	--	0	--	0	--	0	--
Hunting	1	.7	0	--	0	--	0	--	1	4	0	--
Freshwater fishing	1	.7	0	--	0	--	0	--	0	--	0	--
Photography	0	--	0	--	1	.3	0	--	0	--	0	--
Sample Size[d]	148		8		291		19		24		4	

[a]Activities which were not listed as a most important activity by any of the respondents were not included in this table.

[b]N = number of respondents.

[c]Percent values are based on the number of respondents who indicated that their most important activity participation was in that particular zone.

[d]Number of respondents who indicated that their most important activity participation was in that zone; used in calculating percents above.

Table 7. Number of nights of stay by zone for overnight visitors sampled, King Range NCA study area (Summer, 1979).

Nights	Zone 1		Zone 2		Zone 3		Zone 4		Zone 6		Zone 7		Zone 8	
	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]
1	26	68	6	50	40	43	9	45	6	60	1	50	4	67
2	9	24	2	17	18	20	4	20	4	40	0	--	2	33
3	2	5	3	25	10	11	3	15	0	--	1	50	0	--
4	0	--	1	8	5	5	3	15	0	--	0	--	0	--
5	1	3	0	--	7	8	1	5	0	--	0	--	0	--
6 or more	0	--	0	--	12	13	0	--	0	--	0	--	0	--
Sample size[c]	38		12		92		20		10		2		6	
Total overnight use[d]	55		23		287		43		14		4		8	

[a]Number of respondents.

[b]Percentage values are based on the total number of respondents who indicated an overnight stay in the zone.

[c]Number of respondents who indicated at least one night's stay in the zone.

[d]Reflects the total number of nights spent by respondents in each zone.

[e]An overall total of 173 respondents, or 35 percent of the sample, stayed overnight at least one night in the study area.

of the respondents stayed overnight at least one night in the King Range. Also, one night was the most common response across all zones. The Shelter Cove area (zone 3) exhibited the largest number of overnight stays, followed by zones 1 and 4.

While three (people) was the average party size and average number of people per vehicle, two (people) was the party size and people per vehicle most frequently observed (Table 8). Over 50 percent of the interviews were with respondents traveling with one other person. These data also indicate an apparently strong relationship between party size and number of people per vehicle.

During the questioning interviewers also observed the vehicle type of the respondents. Cars and trucks accounted for over 75 percent of the vehicles exiting the King Range (Table 9). Vehicles typically used for off-road use (motorcycles and four-wheel drives) were driven by less than 4 percent of the respondents.

Over one-half of the people interviewed were relatively unfamiliar with the King Range area. These 58 percent were on their first visit to the King Range, while another 12 percent were visiting the area for the second time (Table 10). At the other extreme, 20 percent of the respondents visited the area frequently (five or more times) during the past year.

Tables 11 through 14 summarize the hours of recreation participation of respondents visiting the King Range. The total hours of recreation of each respondent were determined by questions ascertaining the entrance and exit time of each recreationist leaving the King Range. Table 11 exhibits the distribution of responses across each of several length-of-stay categories. While 33 percent of the users visited the study area less than two hours, 38 percent stayed at least one-half day. The average time spent by respondents visiting the King Range was 22 hours.

Table 8. Number of people per party and per vehicle, King Range NCA study area sample (Summer, 1979).

Number of People	In Party		In Vehicle	
	N[a]	Percent[b]	N[a]	Percent[c]
1	47	10	54	11
2	257	52	254	54
3	72	15	72	15
4	52	11	48	10
5	37	7	32	7
6 or more	26	5	15	3

Average party size = 3 persons

Average number per vehicle = 3 persons

[a]Number of respondents.

[b]Percentage values are based on N=491 respondents answering this question.

[c]Percentage values are based on N=475 respondents answering this question.

Table 9. Observed vehicle type of respondents visiting the King Range NCA study area (Summer, 1979).

Method of Travel	Number of Observations	Percent[a]
Car	211	43
Truck	166	34
Van	63	13
Camper	19	4
Motorhome	8	2
Motorcycle	16	3
Four-wheel drive	4	.8
Foot	5	1

[a]Percentage values are based on N=492 total vehicle type observations.

Table 10. Number of previous recreation visits to study area by respondents sampled in the King Range NCA study area (Summer, 1979).

Number of Previous Visits	Number of Respondents	Percent[a]
0	277	58
1	58	12
2	16	3
3	28	6
4	4	1
5 or more.	97	20

[a]Percentage values are based on N=480 respondents answering this question.

Table 11. Length of stay (in hours) of respondents visiting the King Range NCA study area (Summer, 1979).

Hours	Number of Respondents[a]	Percent[b]
0-2	164	33
3-6	143	29
7-12	17	3
13-24	65	13
25-48	47	10
49-72	23	5
73 or more	36	7

Average length of visit = 22 hours

Most frequently reported length of visit = 1 hour

[a]Number of respondents who indicated their length of visit corresponded to the number of hours specified on the adjacent hours column.

[b]Percentage values are based on N=495 respondents answering this question.

Zone visitation broken down by respondent length of stay in that zone is shown in Table 12. Zones offering the most remote recreation opportunities (2, 4, 7, 8) tended to have visitors staying longer periods of time. Other indications of zone usage are the total hours and average hours of recreation of respondents visiting each zone (Table 13). Zones 3 and 1 had the most hours of recreation participation, while respondents visiting zone 2 stayed there longer than respondents visiting other zones.

To determine if a relationship existed between the most important activity and length of stay of respondents, average total time spent in the King Range by respondents from selected most important activity groups was calculated. Table 14 indicates that campers and ocean fishermen, from boat or shore, spent the longest time in the King Range. Sightseers, as might be expected, had the lowest average time spent in the study area. There are distinct differences between respondents in different activity groups based on time spent in the study area.

Estimates of Total Recreation Participation

Total hours of recreation participation in the King Range are summarized in two ways using data from the three exit interview stations. First, the sample data were used to determine the mean recreation participation of only those recreationists that were interviewed at each exit interview station. Second, the sample data were used to estimate total recreation participation during the sampling period (June-September) for all recreationists exiting each roadside interview station where accurate traffic counter information was available.

The sample summary and estimates of recreation participation were both determined from the exit interview data. During the interview, each

Table 12. Length of stay (in hours) of respondents visiting specific zones in the King Range NCA study area (Summer, 1979).

Hours	Zone 1		Zone 2		Zone 3		Zone 4		Zone 6		Zone 7		Zone 8	
	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]	N[a]	Percent[b]
0-2	61	45	0	--	94	31	2	9	55	64	0	--	1	10
3-6	33	24	0	--	92	30	1	4	19	22	0	--	2	20
7-12	2	2	2	15	22	7	2	9	3	3	0	--	3	30
13-24	19	14	5	39	35	12	7	30	3	3	1	100	3	30
25-48	14	10	0	--	23	8	5	22	4	5	0	--	1	10
49-72	6	4	5	39	13	4	3	13	1	1	0	--	0	--
73 or more	1	1	1	7	24	8	3	13	1	1	0	--	0	--
Sample Size[c]	136		13		303		23		86		1		10	
Most frequently reported length of visit (in hours)	2		10		1		10		1		20		10	

[a] N = number of respondents.

[b] Percentage values are based on the total number of respondents who indicated visitation to a particular zone. Since recreationists could visit more than one zone, the percentage totals might add to more than 100 percent.

[c] Total number of respondents who indicated visitation in each zone.

Table 13. Total hours of recreation participation, by zone, for King Range NCA study area sample (Summer, 1979).

Zone	Number of Respondents[a]	Total Hours[b]	Average Hours[c]
1	136	1517	11
2	13	531	41
3	303	7251	24
4	23	772	34
6	86	490	6
7	1	20	20
8	10	142	14

[a]Number of respondents indicating recreation participation in each of the listed zones. Respondents could engage in recreation in more than one zone during their visit.

[b]Based on number of hours of recreation participation indicated by each respondent recreating in the listed zone.

[c]Average hours were calculated by dividing the total hours of recreation participation per zone by the number of respondents reporting time spent in the zone.

Table 14. Average number of total hours spent at King Range NCA study area by respondents in each of the five most important activities (Summer, 1979).

Most Important Activity	Number of Respondents[a]	Average Total Time[b]
Sightseeing/auto driving	171	5
Hiking/walking on beach	68	17
Ocean fishing from boat	60	49
Ocean fishing from shore	59	36
Camping near auto	28	39

[a]Number of respondents who indicated the listed activity as their "most important" activity at the King Range study area.

[b]Calculated by computing the total hours spent at the King Range study area by respondents who listed the activity in column one and dividing the result by the number of respondents in column two.

respondent was asked how many hours he/she had spent recreating in the study area. This was then adjusted to reflect the recreation of all people in the vehicle with the respondent. Since the basic sampling unit in this study was a vehicle and estimates of use involve counts of vehicles leaving the King Range, each respondent's hours of recreation were multiplied times the number of occupants in the vehicle to determine the total hours of recreation per vehicle. (Hereafter, total hours of recreation[7] refers to the total hours summed for all occupants of a vehicle as calculated above.) To do this we have assumed that all the people in the vehicle were in the area the same amount of time as the respondent, and they were engaging in a recreation activity during that time.

Sample Recreation Participation

Table 15 presents recreation use information for each exit interview station. A distinction between recreation vehicles and all vehicles exiting the study area was made during the calculation of the use data. Recreation vehicles included only those vehicles, selected during sampling, exiting the study area in which the respondent engaged in recreation in the King Range. Summing the recreation participation per vehicle for all recreation vehicles sampled during the summer at each interview station (i.e., total sample recreation participation) and dividing this figure by the number of sampled recreation vehicles gives the mean hours of recreation participation per recreation vehicle exiting the study area from each station. The all vehicle designation included every vehicle stopped for sampling at each interview station during the summer sampling period, regardless of whether or not respondents in those vehicles indicated recreation participation.

[7]This is all referred to as to recreation participation per vehicle.

Table 15. Mean hours recreation use by station for the sample data from the King Range NCA study area (Summer, 1979).[a]

Station	Sampled Recreation Vehicles[b]		All Sampled Vehicles[c]	
	Mean[d]	Number of Vehicles	Mean[d]	Number of Vehicles
Thorn Junction	70.8	322	30.8	740
Petrolia	26.6	146	20.9	186
Honeydew	24.0	25	15.5	39

[a]Data summarizes recreation use at each station only for the vehicles stopped as part of the exit interview procedure (i.e., sample data only).

[b]Only those vehicles at each station in which the respondent indicated recreation participation in the King Range.

[c]All vehicles stopped at each station during the exit interview procedure (recreation and nonrecreation visitors).

[d]Mean hours of total recreation participation per vehicle (i.e., for all occupants of each vehicle) from the sample data at each station.

A value of zero hours of recreation was included in the use calculations for those vehicles in which the respondent indicated he/she had not engaged in any recreation in the King Range study area. This distinction between the recreation traffic and total traffic was made to indicate that: (1) all vehicles exiting the study area were not necessarily there for recreation purposes; and (2) 0 hours is a legitimate response when determining recreation use from traffic counter data. In many instances, managers do not have current survey data to estimate the percentage of recreation traffic exiting an area. Frequently the only data available are counter data specifying the total traffic moving in and out of an area. Assuming the available recreation opportunities and characteristics of the recreation population are essentially the same as the year the sampling occurred, the total recreation participation can be estimated. The mean hours of recreation per vehicle can be multiplied by the number of vehicles exiting the area to give a rough estimate of total use.

The mean total hours of recreation per recreation vehicle at the Thorn Junction station is higher than the means at either Petrolia or Honeydew (Table 15). Yet, when calculations involve all the sampled vehicles, the Thorn Junction mean drops considerably due to the high volume of traffic not engaging in recreation.

Total Recreation Participation

Counter information for the summer sampling period (June 10 to September 10, 1979) was only available from the Petrolia station. Therefore, estimates of total recreation use are only available for that station. Table 16 shows the estimates of the mean and total hours of recreation participation for: (1) all recreation vehicles exiting the study area via Petrolia; and (2) all vehicles (traffic) exiting the Petrolia station. The 36,202 total hours

Table 16. Estimated mean and total hours of recreation use for vehicles exiting the King Range NCA by the Petrolia interview station (Summer, 1979).

Station	Recreation Vehicles[a]			All Vehicles[b]		
	Mean[c]	Number of Vehicles	Total Hours[d]	Mean[c]	Number of Vehicles	Total Hours[d]
Petrolia	26.6	1361	36202	20.9	1732	36202

[a]Estimates for all the recreation vehicles (i.e., all vehicles in which respondents would indicate recreation participation in the King Range if asked) exiting Petrolia between June 10 and September 10, 1979.

[b]Estimates for all the vehicles exiting the King Range by the Petrolia station between June 10 and September 10, 1979.

[c]Mean total hours of recreation per vehicle exiting the study area.

[d]Estimate of the total hours of recreation participation of all people exiting the KRNCA by the Petrolia station between June 10, and September 10, 1979.

estimated for users exiting the Petrolia station is equivalent to 3,017 visitor days. The total hours figure for both the recreation vehicles and all the vehicles are equal because the "all vehicle" designation has 0 hours added in for each vehicle in which the respondents did not engage in recreation in the King Range. Adding 371 zeroes[7] to the recreation total hours does not change the value. Dividing the total hours by an additional 371 vehicles lowers the mean to the reported value (20.9).

[7]The difference between the number of recreation vehicles (1,361) and all the vehicles (1,732) is 371 (Table 16).

REFERENCES CITED

Nie. N. H., C. H. Hull, J. G. Jenkins, K. Steinbrenner, and D. H. Bent. 1975. Statistical package for the social sciences, 2nd ed., 675 p. McGraw-Hill Book Co., New York, N.Y.

EXHIBIT A

ADEQUACY OF KING RANGE EXIT

INTERVIEW SAMPLING

ADEQUACY OF KING RANGE EXIT INTERVIEW SAMPLING

Sampling in the King Range was conducted at three interview stations on roads servicing the study area. One measure of the accuracy of the sample data for representing recreation participation in the King Range is tied to the percentage of sampling at each station. Given adequate sample sizes and the proper proportion of sampling at each station approximating the actual percentage of total use at each station, the sample data should provide an acceptable summary of King Range recreation participation. Although many variables can influence the sampling and interviewing procedures (sample selection, accuracy of data supplied by respondents, etc.), the sampling procedures incorporated in this study were designed to minimize the negative effects of these extraneous variables. Therefore, the degree to which the sample represents the actual recreation participation at each station is a major factor in determining how well the sample represents the population. The adequacy of the King Range sampling during the summer of 1979 based on the percentage sampling at each station is discussed in this section.

Ideally, researchers developing a sampling plan to survey recreation users in an area have accurate data specifying the percentage of total recreation users exiting each interview station. This allows the researcher the opportunity to allocate sampling to each station in the proper proportion to the total. Then after the sampling is completed, the known distribution of recreation participation can be compared to that obtained from the sampling to help verify the representativeness of the sample data. Like

most areas, the real distribution of recreation participation in the King Range was not known when the sampling plan was developed. The sampling schedule and sample size at each interview station were developed from vehicular volume estimates provided by the BLM in Ukiah, budgetary constraints, and the judgment of research personnel and RMS statisticians advising the study. Without knowledge of the real distribution of recreation in the King Range, there is no way to directly determine the adequacy of the sampling in this study.

Based on interviewer counts during the sampling at each station, exact data are available from which strong inferences about the representativeness of the sampling in the King Range can be made. Interviewers recorded the total number of interviews and the total traffic exiting the station during each interview period. One measure of how well the sampling was allocated to individual stations in the King Range can be determined by comparing the percentage of total interviews conducted at each station to the percentage of total traffic exiting each station. Assuming the interview periods are randomly distributed throughout the sampling period, the total traffic counts during each interview period provide a good estimate of the real distribution of traffic exiting the study area. Therefore, the proportion of total traffic exiting each interview station can be used as a standard to which the percentages of interviews at each station can be compared.

The total number of interviews and total traffic counts summed across the summer sampling period (June 10 to September 10, 1979) are listed in Table A-1. The percentage of total interviews acquired at each station are in column three of Table A-1. Seventy-seven percent of the interviews occurred at Thorn Junction, while 19 and 14 percent were obtained from

Table A-1. Exit interview station summary statistics, King Range NCA (Summer, 1979).

Station	Total Number of Interviews[a]	Percent[b]	Total Traffic Exiting During Interview Periods[c]	Total Hours of Interviewing[d]	Total Traffic per Hour[e]	Percent[f]
Thorn Junction	740	77	1,159	170	6.8	81
Petrolia	186	19	221	188	1.2	14
Honeydew	39	4	42	102	.4	5

[a]Total completed interviews at each exit interview station.

[b]Percentages of total interviews at each station, based on N=965 total interviews.

[c]Direct count of traffic exiting each station during summer interviewing.

[d]Total hours of interviewing at each station during the summer.

[e]Total traffic divided by hours of interviewing.

[f]Percentage of total hourly traffic at each station, based on a total hourly traffic of 8.4 (i.e., exiting study area via all three stations).

Petrolia and Honeydew, respectively. Since an unequal number of hours were spent interviewing at each station, the total traffic counts need to be adjusted to an hourly rate to provide an accurate estimate of the distribution of total traffic exiting each interview station (column 6, Table A-1). The percentages in the last column of Table A-1 reflect the percentage of total hourly King Range traffic exiting each station. Comparison of these percentages to the actual interview percentages from each station indicates that the sampling on roads in the King Range provided a reasonably accurate distribution of interviews from each station.

While we do not have specific data to determine the adequacy of the sampling related directly to King Range recreation participation, it can be inferred from the data in Table A-1 that the sampling did produce a representative proportion of recreationists from each station. To make this statement, we assume that the interviewers randomly selected vehicles exiting the study area, and the respondents accurately stated whether they had or had not engaged in recreation in the King Range. If these assumptions are true, the accuracy of the overall sampling (discussed above) should produce an equally accurate and reliable distribution of recreation interviews. Therefore, based on data in Table A-1, it is expected that opinions of Petrolia users are slightly overrepresented, and Thorn Junction and Honeydew users are slightly underrepresented.[1] This discrepancy is considered practically negligible for the interpretation of the summary data in this report.

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[1]These are the opinions of the King Range users exiting each of the interview stations, respectively.

EXHIBIT B

KING RANGE EXIT INTERVIEW FORM

AND INTERVIEWER INSTRUCTIONS

Figure B-1
Exit Interview Form

Approved
OMB No. 040-R3857
Expires June 30, 1980

VISITOR REGISTRATION

visit (area) _____ Location of exit _____ _____

Date _____ (Time) _____ Location of entrance _____

Starting Date _____ (Time) _____ Primary method of travel _____

Number of people in group _____ (Vehicle) _____

The primary trip purpose _____ _____

How many times visited the area in the past year

___ 1) First time ___ 3) Twice ___ 5) Four times

___ 2) Once before ___ 4) Three times ___ 6) Five or more times

Using a map of the area, list all zones traversed in sequence of travel.

Travel Zones	1	2	3	4	5	6	7	8	9	10	11	12	13
# of nights in each	___	___	___	___	___	___	___	___	___	___	___	___	___

Travel Zones	14	15	16	17	18	19	20	21	22	23	24	25	26
# of nights in each	___	___	___	___	___	___	___	___	___	___	___	___	___

NAME _____

ADDRESS _____

CITY, STATE _____ ZIP _____

---

pletion of this form is voluntary and is not required by law or to obtain a federal benefit.

KING RANGE INTERVIEWER INSTRUCTIONS

The summer research in the King Range will utilize a roadside traffic-stop sampling format to interview recreationists. Interviewers will stop traffic exiting the area at designated interview sites and interview one person from each vehicle stopped.

Non-Response -- If a potential interviewer whom you have contacted decides that he/she is not interested in continuing the interview (from the beginning or at any point during the interview), thank them for stopping and record as a non-respondent in the notebook.

Notebook -- A notebook should be kept which includes the following information about each interview period. (sample)

Date	Station	Time Interview Period Started and Total Hours	# Interviews
3/1	H	9:00 (3 hours)	85

# Non-Respondents	# Rec. Interviews	# Non-Rec. Interviews
2	65	18

Federal, Commerical, and Local Vehicles
10

Total Traffic	Total Traffic Eligible for the Survey	Comments
100	90	

Explanation of information recorded in the notebook. The terms that are not self-explanatory or defined here will be defined in the section labeled "selecting a sample."

Date, station, & time interview period started -- self-explanatory

Interviews -- Total number of interviews for that day including non-respondents, non-recs. (local, commercial, etc.), rec. interviews, etc.

Non-Respondents -- Number of people who refused to participate in the study. Only those who refused to supply the use statistic information. (We will record those who refused to provide a name and address back in Ft. Collins.)

Rec. Interviews -- Total number of interviews where recreation participation was indicated by the respondent.

Non-Rec. Interviews -- Number of interviews where there was no recreation. (All non-recs., including non-rec. locals or commercial, described later.)

Federal, Commercial, & Local Vehicles -- Total number of these type of vehicles passing by the interview station. A local vehicle is a vehicle which flashes its lights as it passes by. (explained later)

Total Traffic -- Total number of vehicles passing by the interview station during an interview period.

Total Traffic Eligible for the Survey -- The total number of federal, commercial, and local vehicles subtracted from the total traffic.

Counter Data -- (Read counters near interview station before and after each interview period.)

Date	Count	Time Checked	Location	Working
3/1	43,700	9:00	W	Yes
3/1	43,964	12:00	W	Yes

Selecting a Sample (roadside):

General Technique. Cars will be selected for interviewing at random. A vehicle will be signaled to pull off the highway into the interviewing area. Each vehicle selected for interviewing will be chosen after the previous interview has been completed. Vehicles approaching the interview station while an interview is in process will not be signalled to pull over. But, they should be counted as part of the total traffic. Government, commercial, and local vehicles (that signal) should not be stopped for interviewing. The total number of vehicles passing the interview station (whether interviewed or not) during the interview period should be tabulated on a hand counter. Only vehicles exiting the area will be stopped.

Government and Commercial Vehicles. If the next vehicle to approach an interview station is a government or commercial vehicle, and that vehicle would represent the vehicle which should be interviewed (i.e., first vehicle to approach the station after completion of previous interview), do not stop the vehicle. But, write NON-REC-C on the interview form along with the study area, date (time), and the station location. This should be done only for those commercial or government vehicles which pass by the station when a vehicle is needed for interviewing. At all other times these vehicles can be ignored. Tabulate all the commercial and non-commercial vehicles passing the interview station during the interview period using a hand counter. They should also be recorded as part of the total traffic.

Local Vehicles. Some residents in the area will live in the study area or commute to jobs in the study area. After stopping them the first time and learning that their trip purpose was non-recreational, allow them to pass by during subsequent interview periods. Tell them to flash their lights as they pass so you will know not to pull them over. If a vehicle passes your station and the lights are flashed, and that vehicle should have been interviewed next, write down NON-REC-L on the interview form. Also record the date (time), study area, station. Only record this if they would have been pulled over. Ignore at all other times. Record all local vehicles flashing their lights on the hand counter with the federal and commercial vehicles. Also, they should be recorded as part of the total traffic passing by the station during the interview period. (NOTE! The first time a local vehicle stops, they should be recorded on the interview form as a NON-REC, and counted as part of the total traffic. Do not count them this time as part of the federal, commercial, local traffic; and do not record as NON-REC-L. This only occurs when a vehicle flashes its lights.) Encourage local vehicles to stop if they have been recreating. Only tell them to flash their lights if the purpose of the trip was non-recreational.

Non-Recreationists. Any vehicle that is stopped that has not participated in recreation in the study area (on that trip) should be thanked for stopping and allowed to proceed. Record NON-REC on the form along with study area, date (time), and station.

Rain. If rain (or other adverse weather) begins during the interview period, interviewing will stop. If the rain appears to be intermittent, the interviewer should remain in the vehicle at the station and count traffic passing by. During prolonged rains, the completed interview forms can be checked for completeness and legibility.

Counters. Counters that are installed near the interview areas should be checked before and after each interview period. The counter readings should be checked and recorded as frequently as possible, any time an interviewer passes by that counter.

Instructions

(Decision Rules for Filling Out the Front-End Questionnaire)

Person to Inteview

Interview an adult member of the vehicle stopped. Rotate the position in the car to be interviewed (i.e., if it can be safely done, interview tne driver, then the passenger, the driver, etc.).

Introduction (example)

"Good morning, my name is John Dough and I'm a student from Colorado State University. I'm involved in conducting a study on the activities and preferences of recreationists in this area. Could you spare a couple of minutes to help us with this survey?"

(Introduction should be brief and concise--identify yourself, who you are working for, and why you are there.)

You are associated with the Forest Service and BLM only in that data gathered in the study will be presented to them. Preferably don't offer this information--it may bias the responses of the interviewee.

Questionnaire

- Place your initials in the upper right-hand corner of the interview form.

Ask - "Was the purpose of the trip recreation?"

If no, write NON-REC on the form (discontinue interview) - record upper left on form.

If yes, proceed with questionnaire.

Ask - "Did you recreate in the King Range?"

If no, write To-From (discontinue interview) - Record upper left on form.

If yes, proceed with questionnaire.

To Visit (area): Record study area: K (i.e., King Range)

Location of Exit: Interview station (initial). Record zone number in the second space provided.

Date: Enter month and day. When day is a single digit, enter a 0 before the day. Example: July 12 = 712; July 1 = 701. Next to (time) enter the military time: 9:30 = 9:30; 2:30 p.m. = 14:30. (Record to the nearest half hour--military time only for the hours.)

Location of Entrance: Ask the respondent where they entered the area. Record the zone. Most of the time it will be the same as the exit zone.

Starting Date: Date the respondent's trip began in the area. (Time) time it began. Military time. If they are staying inside the study area for recreation purposes, this date should coincide with the time they arrived. If they are living inside the study area, the time should specify when they began that trip.

Primary Method of Travel. (Type of vehicle) Record the type of vehicle the respondent was driving. Examples: car, truck, van, camper, motorhome, motorcycle, 4-wheel, etc.

Number of People in the Group. Ask the respondent how many people are in his (her) group, and how many people are in the vehicle. Record both.

Primary Trip Purpose. Ask the question, "What activity was most important to you as a reason for visiting the area?" Show them the activity card. Record the number of the activity they give to you. Then, ask them where they recreated the most in that activity. Record zone number on second blank line. Then, ask them what other activities they participated in while visiting the area. Record the numbers of these activities in the blank space next to the zone number line.

How Many Times Visited the Area in the Past Year. Check appropriate line according to the response.

Travel Zones. Each zone on the map of the study area is listed under this question. Trace the respondent's trip on the map provided and record the respondent's best guess relating to how much time they spent in each zone. For many respondents you may not need to have them trace this information. You can determine their travel zones by just talking with them. Record the hours in each zone under the zone number provided. Only record what they have done, not what they plan to do. (Sequence of travel is not important.)

If they spend the night in the area, put an X in the zone(s) they indicate and write in the number of nights spent there. The X is placed on the map where they spent the night, with the number of nights placed next to the X. At the end of each interview or interview period, transfer the zone number and number of nights to the open space on the questionnaire in the lower right-hand corner. Record as zone/nights.

Name and Address. Explain to the person that a formal questionnaire will be mailed out in the fall and that we would like their name and address for that purpose only. The purpose of the mail questionnaire will be to tap people's satisfactions and perceptions of the area, and asking their opinions on management issues. Also, only a small sample of the people will receive the questionnaire.

After getting the name and address of the person interviewed, ask if you could get the names and addresses of the other people in the vehicle (adults) who live at a different address than the respondent. Record this information on the form in the space provided at the bottom of the page. If people are not interested, don't press them. Thank them for their time and discontinue the interview. If they give you their name and address, hand them a green card explaining the research.

--Your interview forms should be checked before they are sent to Ft. Collins.

--In the space under the starting date, subtract the starting date and time from the date above. Record this figure in the space in total hours.

Example: 2 days, 4 hours = 52.

Things to Consider When Conducting a Roadside Traffic-Stop Interview Station

Criteria for selecting a roadside interview site.

1. Sight distance: Sight distance is necessary so flagman can be aware of approaching vehicles. Motorists need this time to slow down or react to an interview station.

2. Adequate width: Area should be wide enough to pull vehicle off road completely. Interviewer should not stand on road during interview.

3. Level road surface: The grade of the road at the interview station should be at a minimum.

Factors to consider when signaling cars to stop.

1. Be attentive to the speed of the approaching vehicle. Begin signaling earlier for faster moving vehicles.

2. Check traffic behind the approaching car. If front car is being tailgated use your judgment in considering whether to stop the car. Speed is a critical factor.

3. Signal several times to make sure you have attracted the driver's attention. Make sure the intentions of your signals are clear and understandable.

4. Do not place any signs close to your signaling position. The driver may be reading the sign as he drives by your signal. (Especially on dirt roads where only two signs are used--the "STOP WHEN SIGNALED" sign should be 50 to 100 ft. from your location. This distance increases with vehicle speed.)

5. Check the traffic before directing a vehicle to leave the interview station.

SUMMER KING RANGE

Activity Definitions and Descriptions

1. Camping near auto: Camping approximately 100 yards or less from auto (includes trailers, campers, car camping, etc.).

2. Camping away from auto (beach): Camping in a beach area, but away from vehicle.

3. Camping away from auto (other): Anywhere but beach.

4. Picnicking (beach): The consumption of food or drink in an area away from camp, but on the beach.

5. Picnicking (other): Anywhere but beach.

6. Sightseeing/auto driving: In this context auto driving is generally defined as driving for pleasure--sightseeing, using a venicle.

7. 4-wheel driving: The user must have actually engaged the 4-wheel drive on the vehicle.

8. Motorcycling: Any kind.

9. Bicycling: Any kind.

10. Hiking/walking (beach): Distance is not important, but on the beach.

11. Hiking/walking (other): Anywhere but beach.

12. Collecting: Gathering resource products. Examples: mushrooms, antlers, rocks, shells, plants, animals, gold. User may be reluctant on this question. Don't ask for specific information. We just would like to know if collecting was done.

13. Ocean fishing: From shore.

14. Fresh water fishing: Any kind.

15. Hunting: Any kind.

16. Nature study: Includes a very broad spectrum of activities from interpretations to identifications, etc.

17. Historical study: Identifying, studying, and observing historical areas in the study area.

18. Photography: Taking pictures, etc.

19. Wildlife viewing: Observing wildlife (or looking for).

20. Sunbathing: Any kind.

21. Swimming: Any kind.

22. Surfing: Not body surfing; using a board only.

23. Other (list):

APPENDIX F

SELECTED CHARACTERISTICS OF THE KING RANGE NON-RECREATION SAMPLE

KING RANGE NONRECREATION SAMPLE

During the exit interviewing in the King Range, names and addresses were obtained from some individuals who were not on a recreation trip when they were stopped at the roadside interview stations. These "nonrecreationists" indicated that they did recreate in the King Range at other times and would like to participate in the study. While the group of nonrecreationists is small and was not intended to be a representative sample, selected data from this group are summarized here to provide King Range managers with additional information about this interested and predominantly local group.

As shown in Table F-1, 356 questionnaires were sent to nonrecreationists. A portion of these were sent in bulk to nonrecreationists who had indicated that they knew other individuals who would be interested in the study if questionnaires were made available to them. A total of 51 questionnaires were completed and returned. While this amounts to an overall response rate of 14 percent, it is not known exactly how many of the questionnaires sent out in bulk actually reached potential respondents. It appears that the number of other interested parties was overestimated by nonrecreationists who asked for large numbers of questionnaires.

As indicated in Table F-2, the majority of the nonrecreationists lived within a one hour drive from the King Range. This contrasts with the recreation sample, only 10 percent of which was local. None of the nonrecreationists were from outside California.

Table F-1. Locations and results of King Range NCA questionnaire mailings to nonrecreationists (Summer, 1979).

	Questionnaires Mailed		Number Returned Complete
	Number	Percent	
Mattole area	200	56	21
Petrolia area	100	28	19
Miscellaneous[a]	56	16	11
Total	356		51
Response Rate = 14 percent			

[a]Approximately one-half of these were sent to Garberville, one-third to Whitethorne, and the remainder to other locations.

Table F-2. Driving time to the King Range NCA from the residences of recreationists and nonrecreationists sampled in the King Range NCA (Summer, 1979).[a]

Driving time to the King Range	Recreationists		Nonrecreationists	
	Number of Respondents	Percent[b]	Number of Respondents	Percent[c]
Within one hour	20	10	29	60
One to four hours	52	26	8	16
Other California	114	57	12	24
Out-of-State	16	8	0	0

[a]Residence is based on zip code of respondent's permanent address.

[b]Percentage values are calculated based on N=202 respondents with valid zip codes.

[c]Percentage values are calculated based on N=49 respondents with valid zip codes.

The responses of the nonrecreationists to the possible management actions were compared statistically to those of the recreationists in the main study sample (Table F-3). No significant differences were found between the two groups on any of the 17 management items. Since it was anticipated that differences between the two groups were most likely to occur on the management items, and none did occur, no further comparisons were made.

Table F-3. Management item means and standard deviations for recreationists and nonrecreationists sampled in the King Range NCA (Summer, 1979).[a]

Possible Management Actions	Recreation Sample (N=195)[b] Mean[c]	S.D.[d]	Nonrecreation Sample (N=49)[b] Mean[c]	S.D.[d]
Expand the present hiking trails to connect the King Crest Trail system to beach areas.	2.5	2.0	2.5	2.5
Maintain closure of beach areas to motor vehicle use near archaeological sites.	2.5	2.5	3.0	2.4
Maintain closure of beach areas to motor vehicle use between Gitchell Creek and the Mattole River.	2.0	2.9	2.2	3.2
Provide drinking water, toilets, and trash receptacles at the trailhead of the King Crest Trail.	2.0	2.4	2.0	3.0
Provide drinking water, toilets, and trash receptacles at the Black Sands Beach near Telegraph Creek.	1.9	2.6	1.8	3.2
Designate some areas in the King Range NCA as Wilderness.	1.9	2.7	2.3	2.6
Provide drinking water, toilets, and trash receptacles at the mouth of the Mattole River.	1.7	2.8	1.8	3.2
Interpretive information describing natural history, cultural and archaeological sites.	1.2	2.5	1.6	3.0
More locational and directional signs.	1.1	2.6	.34	3.1
More maps and brochures.	1.1	2.6	.6	3.2
More ranger personnel.	.5	2.5	.2	3.2
Continue motor vehicle use of beach areas between Telegraph Creek and Gitchell Creek.	- .2	3.1	-1.2	3.3
Permit motor vehicle use on beach areas between Punta Gorda and the Mattole River.	- .6	3.3	-1.3	3.6
A visitor center.	- .7	2.8	- .7	3.3
Improved camper trailer facilities.	- .8	3.1	-1.5	3.3
Improving the road quality within the King Range NCA.	- .9	3.0	- .9	3.5
Upgrading the access roads to the King Range NCA.	-1.0	3.1	-1.0	3.5

[a]This analysis focused on responses to the management items by respondents in the recreation sample (regular sample) and nonreceation sample (interested people from around the King Range). No significant differences were found between the two groups based on a Student's t-test ($p \leq .05$).

[b]Calculations for each management item were based on at least the number of respondents indicated by N.

c. Means are based on responses to a nine-point response format ranging from -4 (very strongly favor) to -4 (very strongly oppose).

[d]Standard deviation (S.D.) is a measure of variation in the responses around the mean.